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Exploring the Impact of AI Integration in Educational Practices on Teacher perceived Self-efficacy

The case Study of EFL Teachers at the Department of English- Laghouat
University

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English Language Teaching .

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Dedication

I would like to dedicate this work to my parents who paved the way for me to be here, my brother and sisters. They have been an incredible source of support and inspiration.

I would also like to extend my dedication to my family, who have always believed in me

To the amazing people and friends I met during my journey, particularly Sabrine, Maroua, and Ichrak who have been my greatest supporters.

I dedicate this work to my supervisor Dr. Houđa Boumediene without her guidance and support, this work would not be accomplished.

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Abstract

Artificial Intelligence (AI) has gained increased attention recently, it has the potential to revolutionize various aspects of modern life, including education and English language teaching. It has significantly influenced both students and teachers, especially when it comes to their confidence. This research aimed to examine how integrating AI technologies impact teachers' confidence and self-efficacy. The research employed a mixed method approach combining quantitative and qualitative data, to explore EFL teachers' use of AI, and their attitudes towards its effectiveness in ELT. It also investigates the main institutional and individual factors that influence teachers' readiness to adopt AI in ELT settings. The findings of this study highlighted positive perceptions of AI's pedagogical value, which are significantly associated with increased integration of AI tools in classrooms, presenting AI tools as an effective and powerful tool in academia and EFL contexts. Moreover, the results indicated a significant positive correlation between EFL teachers' self-efficacy and their likelihood of adopting AI technologies; teachers with high self-efficacy display high levels of willingness to integrate AI tools in their teaching practices. Furthermore, EFL teachers demonstrated that access to formal training can significantly enhance teachers' readiness to adopt AI in classrooms. Thus, further studies are recommended including examining the correlation between AI use and students' self-efficacy to explore the influence of AI technologies on students' confidence and self-efficacy, another recommended area of research is the relationship between AI use in educational practices and teachers' knowledge and teaching experience. Exploring this connection would provide valuable insights on how AI influences professional development, pedagogical strategies, and classroom effectiveness.

Key words: AI; self-efficacy; ELT; EFL teachers.

List of Abbreviations

AI: Artificial Intelligence

EFL: English as a Foreign Language

ESL: English as a Second Language

ELT: English Language Teaching

GPT-3: Generative Pre-trained Transformer

ITS: Intelligent Tutoring Systems

NLP: Natural Language Processing

GPS : General Problem Solver

ASR: Automatic Speech Recognition

LVA: Lyra Virtual Assistant

SCT: Social Cognitive Theory

COVID-19: Coronavirus Disease 2019

List of Figures

| FIGURES | N° |
|---|-----------|
| Figure 1.1: Internal principle of SCT | 19 |
| Figure 1.2: Bandura's Triadic Reciprocal Determination Model | 20 |
| Figure 2.1 : Teachers' Age | 35 |
| Figure 2.2 : Teachers' Gender | 36 |
| Figure 2.3: Teachers' years of Experience | 37 |
| Figure 2.4 : Teachers' Field | 37 |
| Figure 2.5: Teachers Academic Rank | 39 |
| Figure 2.6: Teachers AI Training | 41 |
| Figure 2.7: The Primary Purpose of Using AI | 42 |
| Figure 2.8: Teachers Perceptions of Their Ability to Create a Supportive Environment | 43 |
| Figure 2.9: Teachers' Perceptions of Their Impact on Students | 44 |
| Figure 2.10: Teachers' Confidence in Integrating New Technologies into Their Classes | 45 |
| Figure 2.11: Teachers Perceptions of AI in Enhancing Their Teaching Effectiveness | 46 |
| Figure 2.12: Teachers' Perspectives of AI Tools in Achieving Their Teaching Objectives | 47 |
| Figure 2.13: Teachers' willingness to explore and adopt new tools | 48 |

List of Tables

| TABLES | N° |
|--|-----------|
| Table 1.1: Different Forms of Digital Skills Required to Use ChatGPT | 27 |
| Table 2.1: Teachers' Age | 35 |
| Table 2.2: Teachers' Gender | 35 |
| Table 2.3: Teachers' Years of Experience | 36 |
| Table 2.4: Teachers' Field | 37 |
| Table 2.5: Teachers' Academic Rank | 38 |
| Table 2.6: Crosstabulation of Years of Experience and Academic Rank | 39 |
| Table 2.7: Teachers' AI use in relation to their backgrounds | 40 |
| Table 2.8: Teachers' AI Training | 41 |
| Table 2.9: The Primary Purpose of Using AI | 42 |
| Table 2.10: Teachers' Perceptions of Their Ability to create a supportive environment | 43 |
| Table 2.11: Teachers' Perceptions of Their Impact on Students | 44 |
| Table 2.12: Teachers' Confidence in Integrating New Technologies into Their Classes | 45 |
| Table 2.13: Teachers' perceptions of AI in Enhancing Their Teaching Effectiveness | 46 |
| Table 2.14: Teachers' perspectives of AI Tools in Achieving Their Teaching Objectives | 47 |
| Table 2.15: Teachers' Willingness to Explore and Adopt New Tools | 48 |

Table of Contents

| | |
|--|-----|
| Dedication | I |
| Acknowledgments | II |
| Abstract | III |
| List of Abbreviations | IV |
| List of Figures | V |
| List of Tables | VI |
| Table of Content | VII |
| General Introduction | 1 |
| Chapter One: Conceptual Framework | |
| Introduction | 8 |
| Part 01: An Overview on Artificial Intelligence | 8 |
| 1.1.1 Historical Background on AI | 8 |
| 1.1.2 AI in Education | 10 |
| 1.1.2.1 Intelligent Tutoring Systems (ITS) | 10 |
| 1.1.2.2 AI-driven analytics | 10 |
| 1.1.2.3 Automated grading and assessment | 11 |
| 1.1.3.4 Chatbots | 11 |
| 1.1.3 AI in English Language Teaching | 12 |
| 1.1.3.1 AI in Teaching Reading Skills | 13 |
| 1.1.3.2 AI in Teaching Writing Skills | 15 |
| 1.1.3.3 AI in Teaching Listening Skills | 16 |
| 1.1.3.4 AI in Teaching Speaking Skills | 17 |
| Part 02: Teachers' Level of Efficacy | 18 |
| 1.2.1 Social cognitive theory and self-efficacy | 18 |
| 1.2.2 Teacher Efficacy | 21 |
| 1.2.3 The Relationship between Teacher Self-efficacy and Students Outcomes | 22 |
| 1.2.4 Factors Influencing Teacher Efficacy | 23 |
| 1.2.4.1 Demographic factors | 23 |
| 1.2.4.2 Technological Skills | 23 |
| Part 03 : Integrating AI in ELT: Implications for Teacher Self-Efficacy | 24 |
| 1.3.1 AI Literacy and Teacher Self-efficacy | 24 |
| Conclusion | 28 |
| Chapter Two: Research Methodology and Results' Interpretations | |
| Introduction | 31 |
| 2.1 An Overview on Research Methodology | 31 |
| 2.2 The Research Design | 32 |
| 2.3 Variables of the Study | 33 |
| 2.4 Research Questions | 33 |
| 2.5 Hypothesis of the Study | 34 |
| 2.6 Sample of the Research | 34 |
| 2.6.1 Age | 34 |
| 2.6.2 Gender | 35 |

| | | |
|-------|---|----|
| 2.6.3 | Years of Experience | 36 |
| 2.6.4 | The Field | 37 |
| 2.6.5 | The Academic Rank | 38 |
| 2.7 | Sampling | 40 |
| 2.8 | Tools of Research | 40 |
| 2.9 | Analysis of the Results | 40 |
| 2.9.1 | AI Use in Educational Practices | 40 |
| 2.9.2 | Teachers Self-efficacy and AI Use | 43 |
| 2.9.3 | Thematic Analysis | 48 |
| 2.10 | Interpretations and Discussion of the Results | 50 |
| 2.11 | Results of the Hypotheses of the Study | 52 |
| | Conclusion | 53 |
| | General Conclusion | 55 |
| | Bibliography | 59 |
| | Appendix | 70 |
| | ملخص | 73 |

General Introduction

GENERAL INTRODUCTION

1. General Introduction

In today's world, Technology has become a significant part that can fundamentally revolutionise how people learn, think, and communicate. Artificial intelligence is among the various technologies that have played a significant role in many aspects of modern life, it emerged as a transformative force increasing the efficiency of some tasks, resulting in saving time and resources while making the challenging tasks more achievable in shorter time.

Artificial intelligence has significantly advanced various fields, including education and English language teaching. When it comes to English language teaching, AI is exerting significant influence, primarily reshaping learning experiences .AI-powered tools are used to provide a personalized, adaptive, and engaging learning experience for English as a foreign language students, enhancing their language learning. Artificial intelligence (AI) can effectively transform the way English is taught and learned, allowing EFL students to learn the language in a personalized environment.

Despite the potential benefits of integrating AI technologies in education, they can also impact teachers' confidence and efficacy (Ong et al., 2024) . Teacher self-efficacy is a concept in Albert Bandura's social cognitive theory (1997), which influences their performance in their classroom and students' achievements .Bandura highlighted that Self-efficacy refers to individuals' belief of their ability to perform in a certain task or action. It reflects how individuals perceive their competence in achieving their intended goal. He emphasized that self-efficacy is developed through mastery experiences, vicarious experiences, social persuasion, and physiological factors, which contribute to teachers' confidence in their teaching effectiveness.

2. Statement of the Problem

Recently, there has been a noticeable interest in the use of artificial intelligence technologies in education, particularly in English language teaching. It is observed that some teachers perceive AI technologies as a valuable tool that can enhance their teaching practices, and others consider them as a threat to their profession, negatively influencing their confidence in the classroom. However, a significant gap remains in understanding the impact of integrating AI in educational practices on teacher self-efficacy. Teacher efficacy is a crucial factor that plays a significant role in fostering positive learning environment.

GENERAL INTRODUCTION

3. Aim of the Study

The aim of this study is to examine the relationship between the recently developed and ever growing artificial intelligence and teachers' level of efficacy. Specifically, it seeks to understand how the adoption of AI influences teachers' confidence in their teaching abilities.

4. Research Questions

The primary purpose of this study is to explore and analyse how the integration of AI-powered tools in the classroom affect teachers' confidence and beliefs of their abilities. Therefore, this study seeks to address the following research questions:

1. To what extent are EFL teachers aware of and familiar with artificial intelligence (AI) tools used in English Language Teaching?
2. How do EFL teachers perceive the pedagogical value and practical applicability of AI in language instruction?
3. What is the relationship between EFL teachers' self-efficacy and their willingness to integrate AI tools into their teaching practices?
4. What are the main institutional and individual factors that influence teachers' readiness to adopt AI in ELT setting?

5. Research hypotheses

H01: EFL teachers with high AI familiarity indicate greater willingness to integrate them into their classrooms.

H02: Increased AI integration in classroom is significantly associated with AI's positive perceptions about its pedagogical value.

H03: There exist a significant positive relationship between EFL teachers' self-efficacy and their likelihood of using AI in ELT.

H04: Teachers AI training can significantly enhance teachers' readiness to adopt AI in language instruction.

GENERAL INTRODUCTION

5. Literature Review :

Despite having a chapter for literature review, it is important to note that this area of interest has been addressed in several studies. Artificial Intelligence (AI) has been defined as a part of computer science that has the goal of developing computers and programs that can simulate human behaviour. Since the 1940s, computers have been able to perform difficult tasks like chess playing and understanding mathematical theories. Even with all the advancements in memory capacity, AI programs still face difficulties in fully replicating individual's adoption and knowledge. However, AI systems are reaching the level of human experts in some fields, such as medical diagnosis and search engines, audio or writing (Copeland,2024). Additionally, Stryker and E.K. (2024) defined AI as a computer system or algorithm that can learn and apply this algorithmic-based form of rationalization to complicated processes such as problem-solving, decision-making, creativity, and autonomy . He further explained that AI powered applications and devices can perform several tasks, such as objects recognition, responding to human language , learning from new information , providing expert recommendations , and acting on their own .

The rapid advancements in artificial intelligence (AI) technologies have profoundly impacted various fields , including the field of education. Dwivedi et al., 2021; Su & Yang, (2022) state that AI has recently attracted a lot of attention in the field of education as numerous organizations and educational institutions investigate the potential impact of this technology. Moreover, the use of artificial intelligence in education enhances personalized learning, provide effective learning experiences, enable students to discover their talents, improve their creativity and reduce teachers' workload (Haseski 2019). It is worthwhile noting that teachers should learn what AI is and how to use AI to support teaching and learning (Chiu, 2023, 2024; Falloon, 2020). Additionally, Chertovskikh (2019) asserts that artificial intelligence substantially affects the organizational framework of education , particularly influencing the operations of educational institution administrations . As AI continues to evolve, there is a growing interest on incorporating AI-powered tools and applications into the teaching and learning processes. These AI based tools have the potential to transform how knowledge is delivered, skills are developed, and learning experiences are improved . Ribeiro (2020) argued that Artificial Intelligence in English Language Teaching (ELT) is the most practical field that English language teachers can use . Furthermore, Wang

GENERAL INTRODUCTION

and Hu (2020) note that AI is recently being utilized in English teaching in order to support learning the language , enhance communication , and offer feedback to students .

However, previous studies have investigated that integrating new technologies, such as AI, can impact teachers, particularly influencing their confidence, adaptability, and instructional methods. In this context, teacher's self efficacy is crucial component of educational practices motivating scholars and researchers to carry out further research about it. Oran (2023) claims that in addition to the academic achievement of their students, teachers performance and motivation are influenced by their beliefs in their own self-efficacy .Thus , his work aims to fill a gap regarding the correlation of teacher self-efficacy and the use of AI , where he combined previous studies on both topics(Oran, 2023) . Kasalak & Dagyar, (2020) indicates that teachers who see themselves competent in their work might have high self-efficacy beliefs and these beliefs might have a positive impact on their job satisfaction. Additionally , it is stated by Faloon (2020) that teachers should be competent to safely and effectively use AI in learning and teaching .Because teachers who have confidence in their abilities are more likely to integrate and adopt new technologies such AI in their educational practices , as well as overcoming the challenges that might be faced . In a similar line of reference, Akram et al., (2022) mentioned that teachers must enhance their AI skills to successfully use these technologies in their teaching practices and handle any challenges might be faced.

6. Research Methods

To effectively examine the relationship between AI use in educational settings and teacher's level of efficacy, the current study employed a mixed methods approach that incorporated both qualitative and quantitative data. The quantitative data was collected through the closed-ended questions in the questionnaire, while the qualitative data was collected through the open ended questions administered to university EFL teachers in the English department at Ammar Telidji University of Laghouat during the 2024/2025 academic year to collect and investigate data.

7. Structure of the Dissertation

The present dissertation is organised into two main chapters. The first chapter is theoretical that comprises three parts. The first part of the first chapter is dedicated to discussing key concepts such as AI and the use of AI in education and ELT. Additionally, it presents an overview on AI including a historical background starting from its emergence of AI reaching the present day. This part also highlights some AI-powered technologies used in education. The second part of the first chapter provides a literature review on teacher efficacy, including self efficacy as a key concept and theoretical models on teacher efficacy. Furthermore, the third part is dedicated to the intersection of AI and teacher efficacy, including the relationship between AI literacy and teacher efficacy. Furthermore, it explores the role of teacher training in the age of AI. The second chapter focuses on research methodology employed in this study. It illustrates the target population, sample, methods, data collection tools, the findings, as well as their interpretations and discussion.

Chapter One:
Conceptual Framework

CHAPTER ONE: Conceptual Framework

Introduction

Part One: An Overview on Artificial Intelligence

1.1.1 Historical Background on AI

1.1.2 AI in Education

1.1.3 AI in English Language Teaching

1.1.3.1 AI in Teaching Reading Skills

1.1.3.2 AI in Teaching Writing Skills

1.1.3.3 AI in Teaching Listening Skills

1.1.3.4 AI in Teaching Speaking Skills

Part Two: Teachers' Level of Efficacy

1.2.1 Social cognitive theory and self-efficacy

1.2.2 Teacher Efficacy

1.2.3 The Relationship between Teacher Self-efficacy and Students Outcomes

1.2.4 Factors Influencing Teacher Efficacy

1.2.4.1 Demographic factors

1.2.4.2 Technological Skills

Part Three: Integrating AI in ELT: Implications for Teacher Self-Efficacy

1.3.1 AI Literacy and Teacher Self-efficacy

Conclusion

CHAPTER ONE: Conceptual Framework

INTRODUCTION :

Recent decades have witnessed a profound emphasis on Artificial Intelligence (AI), which has evolved from a theoretical construct into a ubiquitous presence in daily life . The term AI was originally introduced by McCarthy (1955, p.1) who defined it as “the science and engineering of making intelligent machines.” The field of Artificial Intelligence involves creating and designing systems that can perform tasks requiring human-like such as decision-making. More recently, Kaplan and Haenlein, 2019, p. 17) defined AI as “a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation”. Furthermore, interest in using AI in education to speed up the learning process has significantly increased in recent years. Alneyadi, Wardat, Alshannag, & AbuAl-Aish, 2023 states that AI has the potential to transform education by making learning and teaching more personalized, engaging, and efficient . However, several studies have investigated that integrating new technologies, such as AI, can impact teachers, particularly influencing their confidence, adaptability, and instructional methods. In this context, teacher’s self efficacy is a crucial component of educational process

Considering the points mentioned above, this chapter presents some theoretical discussions of artificial intelligence (AI), based on some specialized scholars. Moreover, this chapter focuses on the use of AI in the field of education, and more particularly , the field of English Language Teaching (ELT).

Part 01: An Overview on Artificial Intelligence

1.1.1 Historical Background on AI:

Artificial Intelligence was first reported in the early 1950s. The term artificial intelligence was first coined by John McCarthy(a computer scientist at Stanford) in 1955 when he held the two-month workshop at Dartmouth college in the summer of 1956 , the goal was to assess the hypothesis that all aspects of learning and intelligence could, in theory, be thoroughly defined that robots could be created to take their place (McCarthy et al. 1955) .In addition, the workshop is considered as the “ birthplace of AI” because it coordinated and energized the field . After that, the long-lasting thing to agree on was adopting McCarthy’s new name for the field: artificial intelligence.

CHAPTER ONE: Conceptual Framework

It is worth mentioning that the early years of AI were full of successes and characterized by "AI optimism". A notable example is the development of early AI programs like *ELIZA*, natural language processing developed by Joseph Weizenbaum at MIT between 1964 and 1966. Similarly, the General Problem Solver Program (GPS) by Herbert Simon and RAND Corporation scientists Cliff Shaw and Allen Newell, the program was able to mimic human problem solving protocols (Russell & Norvig, 2003).

The 1970s were characterised by AI first winter. After a period of intense optimism in the field of artificial intelligence between the late 1950s and 1960s, the field of artificial intelligence faced numerous challenges and difficulties. Crevier (1993) stated that the AI optimism led to high expectations among people, but when it failed to meet these expectations, the funding was cut off. However, the First winter period was finished by the foundation of The "Expert System" between 1980 and 1987, a knowledge-based program that uses artificial intelligence to mimic human behaviour contributing to an "AI boom". This system was known for its high performance and simplicity leading to the back of AI (Maad M. Mijwel 2015, p.2,4). Unfortunately, during the late 1980s and the early 1990s the AI boom was cut short and the AI marked the second winter, due to high costs and low improvements, leading to no remarkable results (Maad M. Mijwel 2015, p.2,4).

Thankfully, the second AI winter did not last for long. By the end of 1993, artificial intelligence returned strongly. Moreover, 1997 highlights the year that witnessed IBM's design of a supercomputer called "Deep Blue", an AI powered machine which was able to evaluate 200 million chess positions per second, and to defeat the number one chess player Garry Kasparov (Boughaddou & Chorfi, 2024)

In the 21st century, AI continued to progress in many fields. By 2006, companies such as Facebook and Twitter started using AI as a part of their advertising tool. In 2011 an AI powered virtual assistant was released for IOS smartphones "Apple Siri" which uses voice recognition. Furthermore, OpenAI is a research center that started functioning in 2015 (Brockman et al., 2016), and has made rapid progress in developing AI technology (Devlin et al., 2018). By the year 2020, Open AI developed GPT-3 (Generative Pre-trained Transformer 3), a language model that was able to naturally answer questions, translate different languages, and produce texts based on given prompts. Also, early in 2022, Open AI developed DALL-E, a machine learning system that can create and understand images (Marcus et al., 2022). Additionally, ChatGPT was produced in the same year, allowing users

CHAPTER ONE: Conceptual Framework

to have human-like conversations with robot assistants trained to answer questions and help individuals with various tasks (Maad M. Mijwel 2015, p.2,4).

The history of AI has been marked by periods of winters and booms, which have not only shaped technological development, but also concisely emphasized how each phase influenced education.

1.1.2 AI in education

Notably, the earliest attempts to replace teachers with supercomputers started in the 1970s, marking the beginning of artificial intelligence in education. However, the educational system started implementing AI in 1982 and 1984, which allowed students who received both AI and conventional human instruction to outperform those who did not (Hao, 2019).

AI in education refers to the use of artificial intelligence technologies, such as machine learning and natural language processing, with the aim of enhancing learning, teaching, and decision making processes (Alneyadi et al., 2023) (Hwang et al 2020). It is true that today's teachers are growing up in an environment that is full of AI technologies, and it is significant for them to comprehend them. Furthermore, Melyani (2024) & Harry (2023) stated that AI based tools such as Intelligent Tutoring Systems (ITS), AI-driven analytics, chatbots, and automated grading and assessment tools have noticeably become significant in modern educational practices, significantly enhancing engagement, adaptability, efficiency, and effectiveness.

1.1.2.1 Intelligent Tutoring Systems (ITS) :

ITS are computer-based educational systems that use AI algorithms to design instruction based on student needs, providing individualised support and feedback (VanLehn, 2011). These systems analyze learners' performance, using teaching strategies that improve understanding and retention. Through using techniques including machine learning, natural language processing, and data analytics, ITS can identify students' strengths and weaknesses, immediately assessing students, and offer tailored learning plans (Dories et al 2024).

1.1.2.2 AI-driven analytics :

AI-driven analytics have a significant role in processing huge amounts of educational data, allowing educators and policymakers to make thoughtful decisions. By analyzing student performance, attendance, and other related metrics, educational institutions can recognize trends, predict outcomes, and apply targeted interventions (Malik et al. 2023). Furthermore, it is stated by Popenici & Kerr, 2017 that AI-driven analytics can enhance learning by offering educators detailed insights into student performance, enabling tailored

CHAPTER ONE: Conceptual Framework

interventions Therefore, Educational analytics, powered by AI, is considered to be a pivotal tool for extracting meaningful insights from large datasets, helping educators to make decisions based on evidence.

1.1.2.3 Automated grading and assessment :

AI can automate grading and assessment processes, by providing immediate feedback to students and saving teachers time and effort (AlAli, Wardat, & Al-Qahtani, 2023). Automated grading and assessment systems that utilize AI technologies are reforming educational practices by offering timely, personalized feedback and improving students engagement and learning outcomes. According to Al-Bahrani et al (2018) and Li et al (2022) AI algorithms are able to evaluate student work and offer feedback based on predetermined standards , giving students access to real-time performance feedback. Automated essay grading systems are one instance of AI-powered automated grading (Stoica&Wardat, 2021). These tools evaluate student essays and provide immediate feedback using machine learning and natural language processing

1.1.2.4 Chatbots :

Chatbots are computer programs designed to simulate human conversation, enabling them to interact with people through text or voice interfaces (Sreenivasu et al., 2023). Recently, education marked increasing reliance on chatbots , which provide personalized support to students , automating administrative tasks , and improving engagement (Yeruva, Choudhari, et al., 2022).Chatbots can act as virtual tutors , providing immediate feedback , answering questions and leading students through their learning journey, in addition to providing them with personalized support (Sridhar et al., 2022).Also, Chatbots can manage repeated tasks such as scheduling, grading, and answering frequently asked questions, saving teachers' time and allowing them to focus on more important tasks such as teaching and mentoring (Gningue et al., 2022) .

It is worth mentioning that there are various chatbots , but one of the most commonly used Chatbots today is ChatGPT. Which can simply be defined as an AI chatbot developed by OpenAI . It uses natural language processing to create humanlike conversational dialogue.

CHAPTER ONE: Conceptual Framework

1.1.3 AI in English Language Teaching (ELT) :

The integration of artificial intelligence in education has transformed traditional learning by providing personalized instruction, automating difficult tasks, and engaging students through adaptive technologies. These advancements are significantly transforming various teaching aspects including English language teaching, as it reshapes the way for language learners to learn and for teachers to deliver knowledge.

According to Lan et al. (2020), English is one of the most widely used languages for discourse, employment, markets, travel, and global communication. English language instruction aims to improve students' capacity to interact with individuals from other nations (Mukhallafi, 2020). Studying English has always been challenging for those learning it as a second or foreign language (ESL/EFL) (Mehrotra, 2019). Furthermore, there are a number of challenges for learners to overcome such as inadequate input or exposure to the target language, limited chances to use English inside and outside the classroom, the need to communicate in English across language and cultural boundaries, and a lack of skills to manage their own learning (Renandya and Widodo, 2016). However, educators need to seek ways to facilitate English learning.

Artificial intelligence (AI) is being recognized as a significant resource to support English language teaching and learning (ELT/L) that can provide new strategies and opportunities to overcome challenges, and enhance learning (Baranwal, 2022). Also, according to Li (2017) "Artificial intelligence also functions as a tool for enhancing English teaching". Through organizing and personalizing the content, AI in ELT enhances the learning process taking into account the levels of students (Mukhallafi, 2020). Therefore, the use of artificial intelligence, machine learning, intelligent search, and natural language processing may effectively improve English teaching and learning (Wang, 2019). Recent developments in Natural Language Processing (NLP) and machine learning have enabled for subtle applications that simulate human-like feedback, thereby giving English language learners real-time corrections and recommendations in areas including grammar, vocabulary, and pronunciation (Jegade, 2024).

AI-based technologies characterized by a dynamic and evolving range of tools designed to meet the different needs of language learners in ELT context. Chatbots, for instance, have become increasingly known for encouraging conversational skills. Tools such as Replica and Duolingo's AI-powered conversational assistants simulate authentic human dialogue, providing learners with real-time opportunities to practice the language in a relaxed

CHAPTER ONE: Conceptual Framework

atmosphere (Tolstykh&Oshchepkova, 2024). These chatbots use natural language processing (NLP) algorithms to interpret input and develop responses that are contextually relevant , creating an engaging experience that closely mimics human interaction . In addition, the evolution of AI supports differentiated instruction, especially when it comes to diverse ELT classrooms (Johler&Krumsvik, 2022).

In a study titled “Research on Artificial Intelligence Promoting English Learning Change”, Wang (2019)link between artificial intelligence and English language teaching in the following points :

1. Artificial intelligence have changed English learning environments . And have enabled English immersion learning . Learning English transforms into a more immersive and visual experience by effectively integrating and comprehending various data forms such as visuals, voice, and text in through the use of intelligent devices . Students can connect with AI through the human- computer interaction , which enhances the authenticity of language environments .
2. Artificial intelligence have maximized the effectiveness of English teaching . He added, AI will provide a real simulation conversation platform for English language education , including assisting students in improving their English writing , speaking , and comprehension skills.
3. The application of AI in ELT has improved students’ practical skills . Besides that , during AI assisted teaching , many challenges and struggles will be shown . Through the guidance of English knowledge content in AI system , teachers and students must understand how to operate a system and find quick solutions to problems for science and technology to be effectively used in English language teaching (ELT).

Studies have been conducted in the field of English language teaching (ELT) on the application of AI in different English language contexts . One of them is a study titled "Artificial Intelligence (AI), Based Instructional Programs in Teaching-Learning of English Language," by Gawate (2019) who claims that using AI have enabled teachers to develop high-quality teaching and learning that cover all aspects of language learning including listening, speaking , reading , and writing .

1.1.3.1 AI in Teaching Reading Skills

The integration of artificial intelligence (AI) into various aspects of education has recently gained a niteable interest. Among the erea where AI showed a significant potential is teaching reading skills. Nugrahawati (2024) in her study titled “Enhancing Reading

CHAPTER ONE: Conceptual Framework

Comprehension in Higher Education: Exploring the Role of Artificial Intelligence in Teaching Reading” has mentioned a number of advantages of AI in teaching reading skills. One of the benefits of AI in teaching reading is its ability to provide personalized learning experiences. AI algorithms can also evaluate students’ learning styles, preferences, and progress to adapt educational resources and experiences to meet learners’ specific needs.

AI-powered reading programs provide adaptive assessment tools that continuously evaluate students' reading skills and comprehension levels. These assessments are flexible, changing difficulty levels based on learners’ performance, and offering instant feedback on strengths and areas of improvement. Moreover, AI improves reading instruction by providing interactive and engaging learning tasks by using multimedia elements, gamification, and attractive storytelling techniques. AI’s interactional features such as voice recognition, natural language processing, and virtual tutoring allow learners to involve with readings in inventive ways, promoting deeper comprehension and critical thinking skills. (Nugrahawati (2024). Furthermore, MCarthy et al, (2018) found that using ITS programs can help students in improving their English language reading skills by raising metacognitive awareness.

In addition to that, AI-based reading tools enhance accessibility and inclusivity in education by catering to a variety of learning needs and preferences. AI technologies provide a range of options such as text-to-speech, dyslexia-friendly fonts, and audio descriptions for students with disabilities or learning differences in order to facilitate equitable access to reading materials . Likewise, multilingual support and translation options allow English language learners and students from non-English speaking backgrounds to reach educational content in their native languages, supporting linguistic diversity and integration.

AI systems can provide beneficial tools that guide instructional practices and curriculum design through gathering and evaluating data on students' reading skills and academic performance. They indeed, enable teachers to effectively use strategies and interventions to enhance student achievements.

1.1.3.2 AI in Teaching Writing Skills

Among the four skills, writing is the most difficult skill and it needs more practice,(Rao 2017) . AI has not only played a significant role in reading, but it also has its impact on EFL students’ writing skills. As a crucial tool in education , AI can improve English writing teaching by offering tools such as iWrite that offer writing instruction, intelligent correction, and automatic grading, leading to increased writing skill and e student acceptance (Xia et al., 2022). Additionally, AI platforms can help expand vocabulary

CHAPTER ONE: Conceptual Framework

diverseness and reduce the challenges related to English usage, effectively influencing learners' perspectives and emotional aspects of writing (Jyi-yeon&Youngsoo, 2023).According to Yang (2022), AI writing tutors powered by semantic analysis can become valuable sources for teachers, assisting them in identifying mistakes and improving student learning outcomes. A study done by Dizon&Gayed (2021) has shown that the use of AI-driven writing tools, such as Grammarly, can help students in recognizing their writing errors and improving their skills more effectively than traditional feedback from teachers. In addition to that, research by Aljuaid (2024), and Pitychoutis (2024) find that the integration of AI technology in academic English classes not only improves students' writing quality but also makes learning process more engaging and interactive.

Jyi-yeon &Youngsoo (2023) conducted a study to identify the features of English writing and learners' perceptions on the use of AI –driven platforms . The study used AI-based English writing scoring, English grammar check platform, and machine translation platform for the English writing process for 20 students in a general English required course in C university . The English composition drafts in 3rd week (pre-test) and 15th week(post-test) were compiled as a learner corpus and were analyzed by Text Inspector and Jamovi 2.3.21. Additionally, a survey and reflective writings were used to explore learners' perceptions of using AI-based platforms for learning English writing. After analyzing the corpus of pre- and post-test , results indicated a significant improvement only in terms of vocabulary diversity in English writing , and no notable difference was shown in quantitative improvement concerning the number of sentences and sentence length. Moreover, learners highlighted the positive impact of AI-based technologies on the effectiveness of English writing teaching and learning , and mentioned that it greatly reduces the challenges related to using English.

The use of AI in writing instruction can transform teaching, allowing teachers to deliver more effective lessons and provide individualized support. It allows them to identify areas of improvement of their students and offer personalized feedback and guidance on grammar, structure, and style.

1.1.3.3 AI in Teaching Listening Skills

Recently, the incorporation of AI tools into educational settings, particularly within the realm of English language teaching, has earned a significant attention . The evolution of listening skills has also been significantly impacted by the quick developments in artificial intelligence (AI). AI technology has transformed the way individuals learn and improve their

CHAPTER ONE: Conceptual Framework

listening skills, mainly in areas of speech recognition and natural language processing (NLP). People can now access to personalized learning tools that assess pronunciation, intonation, and provide immediate feedback and specialised exercises due to AI-driven tools and applications.

In a study published by Suryana et al. (2020) which investigated students' perspectives of using Artificial Intelligence mobile applications such as Tune In, Joox Music, VOA Learning English Listening every day, and Netflix to improve English listening skill among non-English major students . In order to gather information from students on the AI mobile application in improving English listening skills, the online interview with three females and two males at the Faculty of Psychology in Universitas Sarjanawiyatwas employed. The survey includes seven questions which are about: 1. The understanding of artificial intelligence; 2. The understanding of Tune In, Joox Music, VOA learning English listening every day, and Netflix; 3. How the applications are used ; 4. The justification for utilising the applications; 5. How application help improve English listening skills; 6. how the applications affect users; 7. The best and most efficient applications for developing English listening skills. Netflix is discovered to be the most effective and efficient AI mobile application for enhancing English listening skills (Suryana et al., 2020).

Furthermore, a research done by Ghoneim and Elghotmy (2021) explored the effectiveness of an AI-based programme in enhancing EFL listening skill among primary school pupils. Their study, included (80) pupils divided into two groups an experimental group(40) taught using the AI programme and a control group (40) receiving regular instruction . The tools utilised in the study included: an EFL listening checklist in order to identify the essential listening skills developed by sixth year primary stage students, a pre and post listening skills test to evaluate pupils' listening skills before and after using the program , and rubric for correction. Results revealed a significant enhancement in the listening skill of the experimental group, showing that AI technology has raised pupils' engagement and motivation.

With AI assistance, teachers can create an effective, adoptive, and personalized listening activities based on students' needs, enabling them to assess students' performance and streamlining their learning progress. As well as assisting students' listening comprehension through offering correct and clear pronunciation of words which familiarizes students with how certain words are pronounced.

CHAPTER ONE: Conceptual Framework

1.1.3.4 AI in Teaching Speaking Skills

In addition to applying AI in teaching reading , writing , and listening skills , AI also can be used in teaching speaking skills . Today , the desire to speak the target language fluently is the main factor driving the trend of studying foreign languages (Wiranti, 2013). AI can provide EFL learners with different applications and tools that can enhance their speaking. For example, When students speak to an AI, its Automatic Speech Recognition (ASR) processes their speech and voice in a sequence (Li, Deng, Haeb-Umbach, & Gong, 2016) . Which means, AI can be utilized to improve speaking skills , particularly when a native speaker of the foreign language is not available in the classroom. Furthermore, humanoid robots Erica and Sophie are capable of having conversations and displaying human-like body language and facial expressions. These robots are designed to provide physical representation of artificial intelligence (Sindermann et al., 2021).

According to a study done by Junaidi et al. (2020) that aims to assess the effectiveness of artificial intelligence applications in EFL classrooms. In this study, the Lyra Virtual Assistant (LVA) was used, which was selected based on the belief that it can help the students perform better when speaking was employed. It is worth noting that LVA is iOS and Android-compatible intelligent personal assistant created by artificial solutions (Budzinski, Noskova, & xijie, 2019). The application makes recommendations, controls the user's device, and responds to enquiries on a range of subject using natural language understanding (Budzinski et al.2019).

The goal was to improve the speaking skills of seventh graders, whose English proficiency was considered weak. School policies allowed mobile phone use in this grade . A sample of 33 and 32 students, respectively from the experimental and control groups have participated in the study .Both groups had an equal speaking skills .And the oral test was used in both pre and post tests . The content from the syllabus used for the pre-test included students speaking with unsuitable tone and incorrect pronunciation.

After that, researchers started teaching both the experimental and control groups. The control group was taught using chosen lesson materials and vocabulary pronunciation exercises. The experimental group received the same content ; however, they practiced the pronunciation using the Lyra Virtual Assistant app. Two sessions of forty minutes were conducted over four weeks. Then the post-test was conducted. The results indicated that the use of LVA for teaching speaking skills produced better results for the experimental group

CHAPTER ONE: Conceptual Framework

compared to the control group. Consequently, Lyra enhances students' performance in speaking English.

Other tools powered by artificial intelligence empower educators to enhance students' speaking skills, including Voice assistants such as Amazon Alexa, Apple Siri, Samsung Bixby, Microsoft Cortina and Google Home Assistant which provide an untiring chat partner with a human-like voice that can offer a variety of English language accents to select from (Dizon& Tang, 2020).

AI has greatly improved teaching speaking skills by offering immediate feedback on pronunciation, grammar, and fluency. These technologies also allow for personalized practice, and engaging learning experiences, enabling students build their confidence and improve their speaking abilities.

Part 02 :Teachers' Level of Efficacy

1.2.1 Social cognitive theory and self-efficacy

Social Cognitive Theory (SCT), reformulated the *Social Learning Theory*, put forth by Bandura (1986, 1997), suggests that individuals pick up knowledge from their surroundings. Bandura (1997) claims that humans are only partially products of their environments. By selecting environments carefully, individuals can influence what they become. Both their beliefs and capabilities affect the decisions they make. This theory provides a structure comprehending, forecasting, and modifying human behaviour (Green &Peil, 2009).Social Cognitive Theory (SCT) states that parts of an individual's knowledge acquisition can be directly associated with observing others within the context of social interactions, experiences, and outside media influences. Bandura proposes only a single internal principle composed of three interacting elements. This principle is termed "triadic reciprocity". Some scholars in the area of SCLT such as Green &Peil, 2009 supported Bandura view of triadic reciprocity and define human behaviour as a triadic, dynamic, and reciprocal interaction of personal factors, behaviour, and the environment.

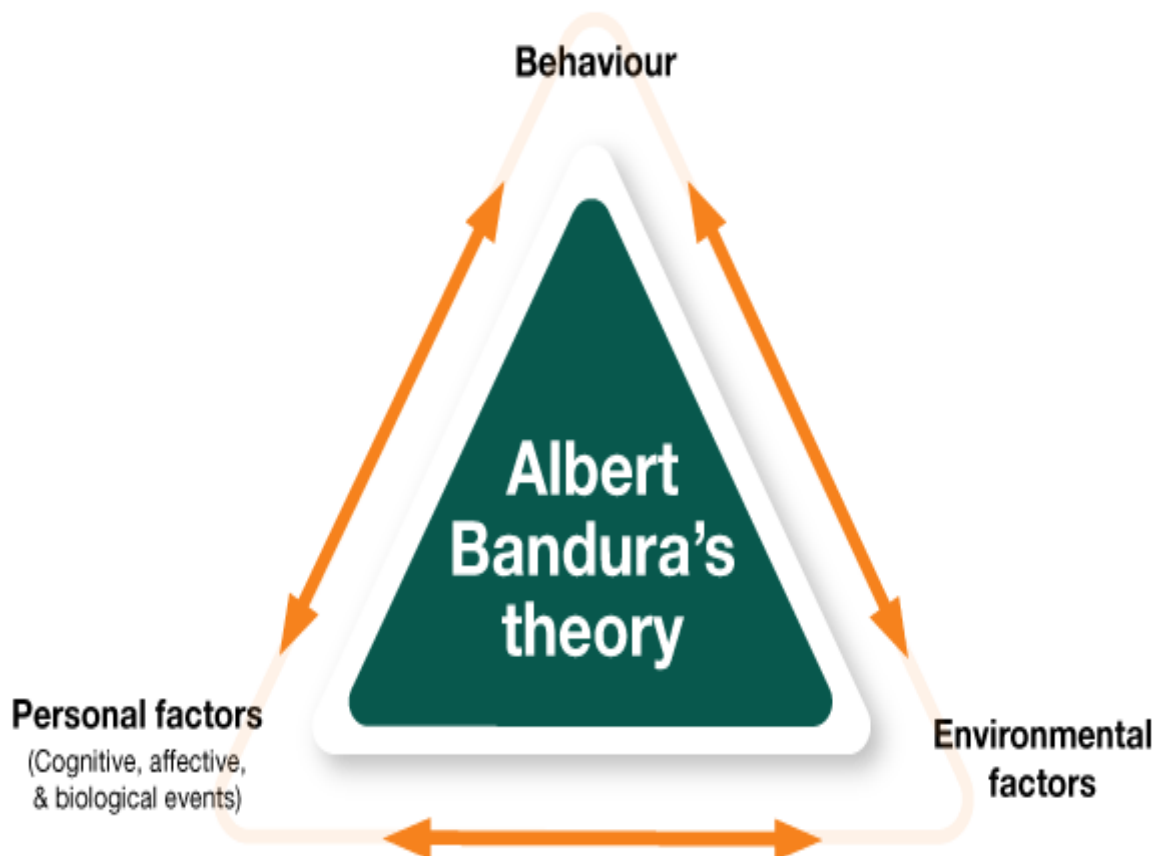


Figure 1.1. Internal principle of SCT

Moreover, The theory highlights a number of crucial factors that influence human behaviour. The first factor is perceived self-efficacy, which is concerned with individuals' beliefs in their abilities to execute a certain action needed to achieve a desired outcome. Another factor is Outcome expectancies, which are related to individuals' perceptions of the possible consequences of their actions. In addition to these two cognitions, SCT also includes goals and perceived impediments and facilitators.

CHAPTER ONE: Conceptual Framework

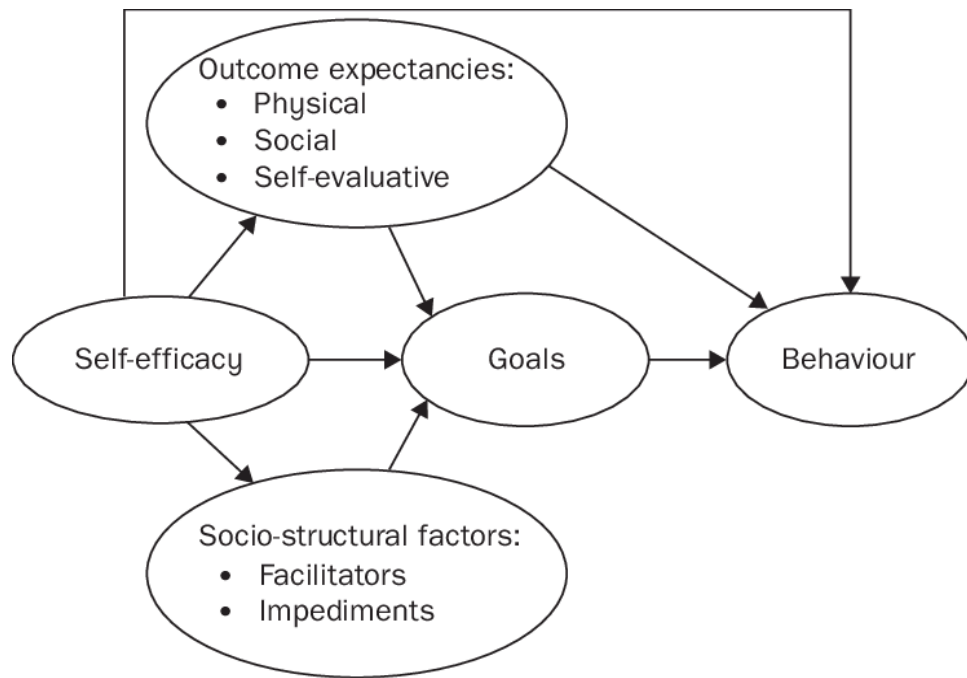


Figure 1.2. Bandura's Triadic Reciprocal Determination Model

Self-efficacy

Self-efficacy refers to the ability to achieve a desired or intended result (Agcam&Babanoglu, 2016). Self-efficacy is rooted in Bandura's social cognitive theory. This theory views people as active agents who can influence and are influenced by their environment. Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce to given attainments". Self-efficacy is often viewed to be task-specific, meaning that people can feel confident in their ability to succeed in one task but not another. For example, a student may feel confident in their ability to do well in an exam but not feel as confident in their ability to speak in front of the others. Bandura (1977) further stated that self-efficacy is influenced by four main factors: mastery experiences, vicarious experiences, social and verbal persuasion, and physiological states. Among these, Mastery experience is viewed as the most crucial factor. Because it is linked to repeated attempts at a task whereby successful overcomes have been gained through adversity, obstacles, and difficulties.

This theory of self-efficacy is based on the idea that different individuals have different levels of self-efficacy under particular circumstances. The main focus of the theory is the difference between individuals with high self-efficacy and low self-efficacy in terms of their attitudes for tasks, the amount of work to be done, and their performances. He pointed

CHAPTER ONE: Conceptual Framework

out that the definition of self-efficacy, along with its benefits, remain consistent across all cultures. He also states that if people have a strong “sense of self-efficacy” for a task, they are likely to succeed in it, and it can be argued that they have strong self-efficacy to accomplish the task (1997, p .43). In the light of recent studies, Nabavi (2012) claimed that a person with a high sense of self-efficacy may be less afraid of failing than someone with a low sense of self-efficacy. This suggests that self-efficacy beliefs affect a person’s capacity to think either positively or negatively, which can either promote self-improvement or result in self-debilitating thoughts.

Teacher Efficacy:

Research on teacher self-efficacy have largely been developed based on Bandura’s (1994, 2002) concept of self-efficacy. Teacher self-efficacy has been defined as teachers’ beliefs in their ability to plan, organize, and carry out activities that are required to attain given educational goals(Skaalvik and Skaalvik 2010). teacher-efficacy also be described as the confidence teachers have in their ability to challenge themselves to achieve goals and objectives within their teaching and learning practices (CheSulaiman&Wahab, 2017). Moreover, it is stated by Tilfarlioglu and Ulusoy,(2012) that teacher self-efficacy has significantly impacted the classroom management particularly addressing students’ misbehaviour. Additionally, teachers having high efficacy can design interesting academic activities , create a high sense of commitment , capable of controlling setbacks and difficulties , and challenging activities as to be successful (Cherry 2020).They also tend to demonstrate greater perseverance in facing teaching difficulties and explore more creative strategies to help students to comprehend complex topics (Zee and Koomen 2016). It is suggested by Kasalak&Dagyar,(2020) that Teachers who see themselves competent in their professions might have high self-efficacy beliefs and these beliefs might reflect positively on their job satisfaction. Whereas, teachers with a low efficacy feel that challenging tasks are beyond their abilities . They avoid challenging activities and make excuses, and focus mainly on negative , get focused on negative effects and take it as personal failings, eventually, they lose confidence in their own abilities.

Teacher self-efficacy plays a significant role in the selection of the teacher’s personal goals, the level of being insistent to overcome challenges, and the degree of motivation to engage in specific teaching practices such as use of digital teaching learning materials (Glackin and Hohenstein 2018)

CHAPTER ONE: Conceptual Framework

1.2.2 The Relationship between Teacher Self-efficacy and Students Outcomes

Teacher self-efficacy refers to a teacher's perception of their own capability to achieve the desired results in student learning and performance (Taştan et al. 2018). Teacher self-efficacy has a significant influence on teaching practices, classroom management strategies, and students' outcomes. Indeed, with the rapid changes in the educational landscape, teachers must improve their knowledge and abilities in order to meet the various needs of the students and help them succeed in the digital age. Self-efficacy in teaching is not permanent but a belief that can be developed and improved over time. This means that teachers can enhance their self-efficacy through setting realistic goals, engaging in professional development opportunities, and reflecting their achievements in the classroom (Chao, Forlin, & Ho, 2016).

Khan's (2012) study on teacher self-efficacy discovered a strong correlation between students' academic success and instructors' self-efficacy. When teachers build their self-efficacy, they are meant to be more confident in their abilities to effectively teach and foster a positive learning environment (Nurfatimah, Hasna, & Rostika, 2022). This will result in improved student engagement, motivation, and academic success. When it comes to the relationship between teacher self-efficacy and students' achievement, two theoretical frameworks are suggested. The first is the indirect path, which claimed that high teacher self-efficacy will enhance students' achievement through its influence on teachers' behaviour in the classroom (Lauermann & Butler, 2021). In other words, teachers with higher levels of self-efficacy are more likely to persist when faced with challenges or to use a wider range of teaching strategies, which are more effective in addressing the varied difficulties faced in the classroom (Lauermann, ten Hagen, 2021). The second one is the direct path, which states that high teacher self-efficacy may 'rub off' directly on students through the role-modelling process. This increased teacher self-efficacy may lead to improved students' persistence in their schoolwork, ultimately enhancing their overall achievement (Lauermann & Hagen, 2021).

In the same context, Paisun et al. (2024) conducted a descriptive study to investigate the connection between student achievements and teacher self-efficacy. The study found a positive relationship between teacher self-efficacy and students' achievements, highlighting the significance of supporting teachers' confidence in their self-efficacy. Another study done by Kim and Seo (2018), the researchers conducted a meta-analysis to explore whether the relationship between teacher efficacy and students' outcomes was affected by the scale used to assess teacher efficacy, and/or by the subfactors of teacher efficacy, teaching experience,

CHAPTER ONE: Conceptual Framework

school location, or the students' educational level. The results revealed that the relationship was impacted by some teacher efficacy factors and subfactors and by the teaching experience.

Furthermore, Mojavezi (2012) conducted a study with a similar topic . They applied teacher efficacy scale to assess teachers beliefs of their efficacy , and questionnaire to evaluate students' level of motivation , and categorized the teachers into groups based on their efficacy; they discovered that there is a significant relationship between teacher self-efficacy and students' academic achievements . Their findings were aligned with Bandura's observation (1994) that high sense of self-efficacy regarding their competence can motivate their students to improve their cognitive development. He claimed that the higher the self-efficacy of a teacher, the higher the motivational level of the students would be.

1.2.3 Factors Influencing Teacher Efficacy

In 2023, Shukri and Matore have conducted a study titled "Trends and Factors Affecting Self-Efficacy among Teachers: A Systematic Literature Review" , which examined the most dominant factors in influencing the self-efficacy of teachers' teaching and learning practices . They claimed that The factors affecting self-efficacy are also damaging to efforts to identify and modify the teaching and learning process. After choosing 31 articles published between 2017 till 2022 , the findings revealed that demographic factors and technological skills factors are most dominant in affecting the self-efficacy of a teacher.

1.2.3.1 Demographic factors

Regarding of demographic factors, teachers age, type of school, level of education, and training experience are associated with teacher efficacy (Wirmayani &Kurniawati 2021). Age and teacher efficacy have been shown to positively correlate (Sharma et al., 2012). The efficacy of teachers increase with their age. Furthermore, Specht &Metsala (2018) claim that since highly educated teachers are better informed and trained in equitable practices, they typically have high levels of teacher efficacy. Consequently, the more experience the teacher has, the more effective they will be.

1.2.3.2 Technological Skills

Examining specific domains such as technology, may assist identifying educators who are more likely to adopt technology, as those with higher levels of efficacy typically show higher levels of implementation (Epstein 2018) . Furthermore, knowing how to utilise technology is not sufficient for effective teaching practices. In order to enhance teacher candidates' TSE in technology integration, it is important to offer iterative and diverse

CHAPTER ONE: Conceptual Framework

opportunities to engage with technology in various educational environments and contexts (Lee & Lee 2014). In this context, educational support is essential for teacher self-efficacy (Pelaez et al. 2022). Therefore, providing resources including technology tools can help teacher increase his/her level of self-efficacy (Saeinko et al., 2020; Thomson & Sorbet, 2020).

Additionally, teachers' self-efficacy may be impacted by their prior experiences, attitudes, and confidence in their ability to learn and adjust to new technology. Teacher efficacy can be greatly increased by providing opportunities for professional development, gathering access to technological tools, and encouraging the exploration of novel ideas (Mitchel, 2021).

Part 03 : Integrating AI in ELT: Implications for Teacher Self-Efficacy

The integration of AI into educational settings has transformed traditional teaching methods. Allowing teachers to develop new learning methods, increase efficiency, easily evolve lesson plans and deliver content. AI can also evaluate student performance and offer insights on improving teaching and learning. As a result, numerous educator-researchers have expressed interest in AI applications for teaching and learning (Darayseh, 2023).

A number of studies have examined the influence of AI on teachers' self-efficacy. Engaging with AI technologies elevated job satisfaction and self-efficacy among professionals (Noy & Zhang, 2023). For example, integrating educational technologies can positively affect university teachers' self-efficacy regarding classroom management, instructional strategies, students' engagement, and technology adoption (Saienko, 2020).

1.3.1 AI Literacy and Teacher Self-efficacy

The concept of AI literacy refers to providing teachers with the necessary knowledge and skills for successful AI integration. AI literacy means having the required abilities enable individuals to live, learn and work in our digital world through AI-driven technologies (Steinbauer et al., 2021). Studies indicate that AI literacy involves offering teachers an overall knowledge about AI technologies, such as their qualifications, limitations, and possible influence on teaching and learning (Lindh & Pors, 2020). Similarly preparing them to not only understand specific tools but also promote a critical mindset of the implications of AI in education. Additionally, García & García, (2020) stated that programs that combine technical training with ethical considerations are effective in preparing educators to responsibly use AI in the classroom.

CHAPTER ONE: Conceptual Framework

Several studies have highlighted the significant influence of AI in educational settings, emphasizing its capability to transform both teaching and learning. However, teachers must be aware of these tools and be qualified with the necessary knowledge and skills to effectively integrate AI technologies into the classroom. It is suggested by Holmes et al., (2019) that a major obstacle to AI integration in educational settings is teachers' limited technical skills and understanding of AI ;due to lack of teacher knowledge on AI features, many teachers may not embrace such systems. Additionally, Zhao et al., (2019) stated that a lack of confidence in technology use and insufficient training programs are crucial challenges for teachers adopting artificial intelligence. Teachers and students must acquire advanced digital skills, which include learning how to use AI tools such as ChatGPT and facilitating academic tasks that benefit from its features while simultaneously fostering the various literacies that are essential in the age of digital technologies, as AI-driven technologies continue to evolve daily. However, their use must be ethical and educationally appropriate. That is to say, lack of knowledge about the AI tools could prevent teachers from using it in a way that would be significantly beneficial for the students and resulting in the tools being either underutilized or misused.

In a study done by Taqa (2025) about “Teacher Training and Professional Development in the Age of AI” , and which explores the evolving role of teacher training and professional development in the context of AI integration, it is claimed that various opportunities were identified for improving teacher training and professional development in AI which are :

Experiential Learning Models: Teachers showed a preference for experiential, hands-on learning experiences that enable them to directly interact with AI tools in a practical way. Professional development programs that provide simulations, workshops, and collaborative projects are more likely to gain teachers' attention and improve their confidence in using AI.

Collaborative Networks and Communities of Practice:

Teachers who were involved in collaborative networks or communities of practice encountered higher success in AI adoption. These communities provide teachers with great opportunities to exchange knowledge, address challenges, and benefit from shared experiences.

Ethical Training and Critical AI Literacy: Teachers have emphasized the need for training that addresses not only the technical aspects of AI but also the ethical considerations. Programs that include technical training with ethical discussions are essential for teachers, they enable them to responsibly integrate AI in the classroom (García&García, 2020). Specifically, professional development programs that include the ethical considerations of AI,

CHAPTER ONE: Conceptual Framework

such as bias, fairness, and privacy, can help teachers to use AI responsibly. Integrating critical AI literacy into teacher training ensures that teachers are not only skilled in using AI tools but are also equipped to avoid the complex ethical and social challenges that appear from AI in education.

Ongoing, Personalized Support: Teachers need consistent and personalized support to successfully integrate AI in their classrooms. Programs that provide ongoing guidance, peer coaching, and online resources can significantly help teachers overcome challenges and enhance their use of AI tools over time. In addition to addressing each teacher's specific needs and foster long-term improvement.

There are new technological advancements in AI that involve teachers to stay updated with the latest AI trends to effectively adapt and use suitable technologies in their teaching practices (Luckin et al., 2016) . According to Livingston (2012) through continuous learning, teachers build confident of their competence in applying AI tools and preparing themselves for potential future innovations . Moreover, training programs must be designed to be flexible and responsive to the diverse needs of educators, schools, and students. Encouraging collaborative learning communities, providing hands-on experiences and ongoing mentorship and support can help teachers feel confident and empowered in their AI tools use . This does not only enhance teachers' skills but ensures that students benefit from the learning experiences in an AI-enhanced classroom.

As AI becomes increasingly prevalent, language teachers must improve their AI literacy skills to fully harness its advantages, and create a dynamic and technology advanced learning environment for their learners. Choi et al (2023) asserted that teacher AI literacy programs are significant for effective integration of AI in English language teaching and learning contexts . In their study, most EFL teachers emphasized the necessity of these programs for professional development to evaluate their technological readiness .AI literacy programs offer a broad framework of competencies including the needed knowledge and skills about the various AI driven tools , such as ChatGPT .ChatGPT literacy aid language teachers to efficiently use ChatGPT for developing useful teaching materials in ways that are educationally appropriate and ethical (Ma et al., 2024) . However, during the COVID-19 pandemic , and due to the necessity of online instruction , Moorhouse(2023) indicated that language teachers have improved their digital literacy, but they still require more training to effectively use ChatGPT as it is not well known . The digital literacy abilities needed by instructors to use ChatGPT are compiled in Table 1.1 below.

CHAPTER ONE: Conceptual Framework

| | |
|---|---|
| <p>Technological Competence</p> | <ul style="list-style-type: none"> • Be familiar with ChatGPT • Develop efficient prompts and effectively engage with ChatGPT • Address the classroom challenges using ChatGPT • keep updated with about ChatGPT advancements |
| <p>Pedagogical Compatibility</p> | <ul style="list-style-type: none"> • Develop plans or ways to use ChatGPT to enhance language teaching and learning. • Include tasks that use ChatGPT. • Support learners to use ChatGPT for independent or self-directed learning . |
| <p>Social Awareness</p> | <ul style="list-style-type: none"> • Maintain a critical understanding of ChatGPT’s limitations and address them when designing and implementing tasks. • Inform learners about the risks, ethical considerations , and limitations of ChatGPT. |

Table 1.1. Different Forms of Digital Skills Required to Use ChatGPT (Kohnke et al, 2023).

Table 01 highlighted three different of skills teachers need to successfully adjust to ChatGPT . The first skill is technological competence, which includes familiarity with ChatGPT. The second skill is pedagogical compatibility , which indicate that language teachers should think about their teaching settings (e .g., features, challenges, and updates) before implementing ChatGPT in their classes because it might not be suitable for all types of learners. The last mentioned skill is the social awareness , emphasizing the importance of educating learners about the drawbacks, risks, and ethical concerns about ChatGPT (Kohnke et al, 2023).

According to recent studies, teachers’ AI literacy can significantly impact their professional identity and self-efficacy (Velandar et al., 2024). Teachers with higher level of AI literacy usually perceive more positive and confident self-image as educators. They are more likely to manifest their knowledge of AI as a tool that enhance their teaching practices. Moreover, they are better prepared to guide students in developing needed skills such as critical thinking, problem-solving, and digital literacy skills essential for an AI-driven age. However, teachers with lower AI literacy may consider AI tools as a feasible threat that could replace them one day, which can lead to decreased self-efficacy and fear of integrating AI in their classrooms (EUN & KIM, 2024) .

CHAPTER ONE: Conceptual Framework

While the existing studies have examined the use of artificial intelligence in education and teacher self-efficacy, only few studies examine the role of AI based technologies on English language teaching. Moreover, many studies emphasized traditional methods for enhancing teachers self- efficacy such as personal development. However, research on AI's direct influence on teacher's self-efficacy in ELT classrooms remains limited . Ultimately, addressing these gaps can effectively improve AI's role in shaping teacher's efficacy in ELT context.

Conclusion

The review of the literature shows that the 21st century has marked a significant reliance on artificial intelligence , which has fundamentally changed various areas of life. In the context of education, AI technologies have enhanced the quality of teaching and learning. also, machine-assisted measures that use interactive Chatbots have been used in English language teaching to offer opportunities to practice the language . It is worth mentioning that teachers adaption of AI can affect teachers' self-efficacy, as it influences their confidence in effectively using new technologies and integrating innovative teaching strategies.

This chapter presented a general overview on Artificial Intelligence, highlighting the history of AI since its inception . It also introduced some AI-powered applications used in education , and in ELT in particular , focusing on the four skills . This chapter demonstrates that AI can significantly support English language learning when combined with high levels of teacher self-efficacy , which in turn is influenced by demographic , psychological, and professional development factors.

Chapter Two:
Research Methodology and
Results Interpretations

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

Introduction

2.1 An Overview of Research Methodology

2.2 The Research Design

2.3 Variables

2.4 Research Questions

2.5 Research Hypothesis

2.6 Sample of Research

2.7 Sampling

2.8 Tools of Research

2.9 Analysis of the Questionnaire

2.10 Interpretations and Discussion of the Results

2.11 Results of the Hypotheses of the Study

Conclusion

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

Introduction

This chapter presents the theoretical framework of the current study. It highlights the research approach, data collection tool, sampling method, and the target population. This study adopts the mixed-methods research, combining qualitative and quantitative methods from questionnaires. The study focuses on English teachers from English department at Ammar Thelidji University of Laghouat as the overall population, from which participants were selected using convenience sampling.

2.1. An Overview on Research Methodology

Research methodology serves as a way to systematically address the research problem. It represents the research methods and procedures for collecting, analyzing and interpreting the data to ensure efficient research process, allowing for reliable and valid findings. Additionally, this section ensures transparency, integrity, and protection of participants. The research methodology consists of some key components, including research design, the sampling method for participant selection, data selection tools, data analysis techniques, and ethical considerations.

The research design serves as the overall plan developed by researchers in order to conduct an investigation. It provides a clear picture of both the construction and conduction of the research (Balnaves & Caputi, 2001, pp. 27-29). Therefore, "a completed research design shows the step-by-step sequence of actions in carrying out an investigation essential to obtaining objective, reliable, and valid information" (Mauch & Park, 2003, p. 123). There are indeed various concepts related to research design, one of them is the methodology, which is mainly about defining the approach used in the study whether qualitative, quantitative, or mixed approach where the researcher use both the quantitative and the qualitative approaches in one study. According to Malla Reddy college of Engineering & Technology (2022) the quantitative research refers to aspects that can be expressed in terms of quantity. It focuses on measuring numerical data, using various statistical and numerical methods for analysis. On the other hand, Swarooprani (2022) stated that qualitative research is concerned with qualitative process, it usually involves the study of human performance, and investigating into the reasons for certain human behaviour. Building on both approaches, the mixed approach is a research approach that involves gathering and analyzing quantitative and qualitative data within the same study (Bowers, Cohen, & Elliot, 2013). This approach was

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

adapted to effectively address research questions that cannot be answered by qualitative or quantitative methods alone. The second concept is the research strategy or approach which need to be selected earlier so the researcher would be more confident carrying out his/ her work .another concept that was highlighted by MEHIRI is the hypotheses, he mentioned that a hypothesis is a tentative statement proposed as an answer or a solution for an urgent practical problem . The last concept mentioned is variables, which are often related to qualities, properties , characteristics , attributes of a phenomenon , situations , person that change or vary. These attributes are assessed in order to discover their interaction and determine one variable influences another. The influential variable is known as the independent and the influenced variable is termed the dependent.

2.2. The Research Design

The current study follows a mixed-methods research which comprises both qualitative and quantitative data. A mixed-method method is a research approach where a research gather and analyze both quantitative and qualitative data in the same study (Bowers, Cohen, & Elliot, 2013). This approach is suitable for addressing research questions that cannot be answered by quantitative or qualitative alone . Instead, it combines both of them to obtain comprehensible results. In addition, using mixed method approach offers a logical ground , methodological flexibility and deeper understanding of smaller cases(Maxwell, 2016). In other words, mixed methods allows researchers to find answers for research questions with sufficient depth and adequate (Enosh, Tzafrir, &Stolovy, 2014), it also helps in generalizing findings and implication of the researched issues to the overall population. For example, the quantitative approach enables a researcher to gather the data from a large number of participants; thus, increasing the possibility to generalise the findings to a broader population. The qualitative approach, on the other hand, offers a deeper exploration of the subject being investigated, capturing participants perspectives (Dawadi , Shrestha , &Giri, 2021).

In order to capture quantifiable data that enables for generalizing results and in-depth insights from EFL teachers at university of Ammar Theliji Laghouat, both quantitative and qualitative data were gathered and examined in this study. The quantitative data was gathered from participants through the close ended questions in the questionnaire , such as multiple choice, and likert scale items . on the other hand, the qualitative data was collected through the open ended questions in the questionnaire , which yield textual, descriptive data .

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

2.3. Variables

Variables are crucial to the research process, they represent the aspects of variances that a researcher wish to explain . The way the researcher uses, handles, or interpret the variables throughout the research process can significantly influence the direction of the study (Nwankwo and Emunemu, 2014). Variables are usually two types namely independent and dependent variables . The independent variable is the variable that causes or predicts the change , it is the one that the researcher has control over its selection and manipulation, whereas the dependent variable is the variable that measures the effect of the independent variable.

2.3.1. Independent Variable

Integrating artificial intelligence into education remains a significant advancement that reshapes teaching and learning. When it comes to ELT, AI-driven tools such as **Automated Feedback & Assessment**, Speech Recognition & Pronunciation Training, Adaptive Learning Platforms, and chatbots enhanced personalized learning, automated assessment, as well as interactive teaching methods allowing teachers to meet various students' needs.

2.3.2. Dependent Variable

The adoption of AI technologies in educational practices has directly influences teacher efficacy , which is considered as the dependent variable of the current study. Teacher efficacy remains a crucial factor that shape the quality of education, it is indeed about how confident and effective teachers are in engaging with their students , apply their strategies, and integrate new technologies in their teaching practices.

2.4. Research Questions

1. To what extent are EFL teachers aware of and familiar with artificial intelligence (AI) tools used in English Language Teaching?
2. How do EFL teachers perceive the pedagogical value and practical applicability of AI in language instruction?
3. What is the relationship between EFL teachers' self-efficacy and their willingness to integrate AI tools into their teaching practices?
4. What are the main institutional and individual factors that influence teachers' readiness to adopt AI in ELT setting?

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

2.5. Hypotheses of the Study

The hypotheses developed for this study are as follows:

1. EFL teachers with high AI familiarity indicate greater willingness to integrate them into their classrooms.
2. Increased AI integration in classroom is significantly associated with AI's positive perceptions about its pedagogical value.
3. There exist a significant positive relationship between EFL teachers' self-efficacy and their likelihood of using AI in ELT.
4. Teachers AI training can significantly enhance teachers' readiness to adopt AI in language instruction.

2.6. Sample of the research

The population of this study includes EFL teachers in the English Language Department at Ammar Telidji University of Laghouat during the 2024/2025 academic year. EFL university teachers were chosen because they often incorporate modern pedagogical techniques, making them ideal participants for assessing the impact of AI technologies on teaching practices, and the overall teacher efficacy. Additionally, providing diverse perspectives about the role of AI in education in general and EFL context in particular. The sample consisted of twenty EFL teachers was selected using the convenience sampling method.

2.6.1 Age :

It is important to consider age as a variable because it is logical to assume that younger teachers are more inclined to use technology based teaching methods in their classrooms. It is worth noting that the age variable was included in this study due to the possibility that teachers' age may affect their familiarity with artificial intelligence. The sample comprised of twenty participants of different ages.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

Table 2.1. Teachers' Age

| Age | Frequency | Percent |
|-------------------------|-----------|---------|
| Less than 30 years old | 02 | 10% |
| from 31 to 40 years old | 12 | 60% |
| more than 41 years old | 06 | 30% |
| Total | 20 | 100,0 |

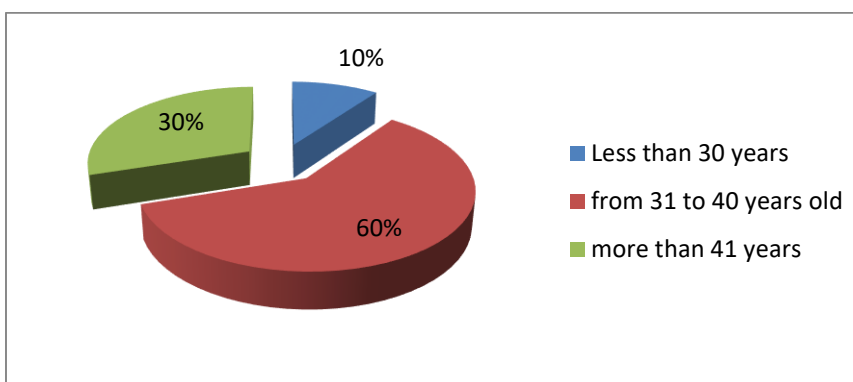


Figure 2.1 .Teachers' Age

Figure 2.1 and Table 2.1 represents the age of the teachers. They are of different ages. Yet, the majority of them (12) with 60% are from 31 to 40 years old , 06 teachers who represents 30% are more than 41 years old . And a minority (02) that represent 10% of them is less than 30 years old.

2.6.2 Gender

Table2.2. Teachers' Gender

| Gander | Frequency | Percent |
|--------|-----------|---------|
| Male | 9 | %45,0 |
| Female | 11 | %55,0 |
| Total | 20 | 100,0 |

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

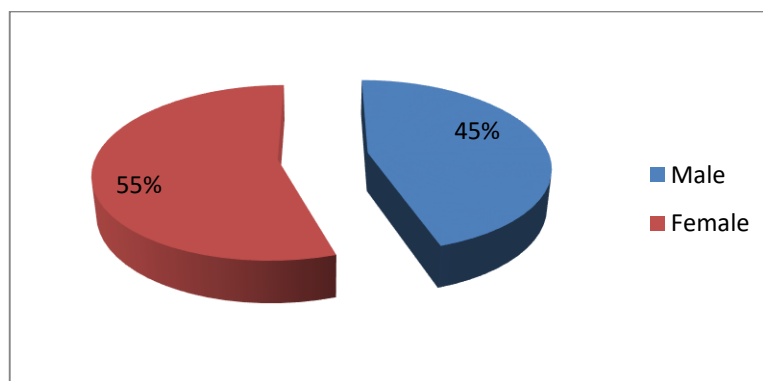


Figure 2.2. Teachers' Gender

The study sample comprised 20 participants, consisting of 9 males (45% of the total number) and 11 females (55% of the total number). From figure 4 we notice that there were more female participants than males EFL teachers in this study. It is crucial to consider gender variable due to the empirical evidence that gender can influence learning differences.

2.6.3 Years of Experience

Years of experience is a crucial variable that was implemented in the sample, and they were divided into four categories. The first one included EFL teachers with 1 to 5 years of experience with 2 teachers, representing 10% of the sample. The second category included EFL teachers with 6 to 10 years of experience, and consisted of 7 teachers, representing 35%. The third category included EFL teacher with 11 to 15 years of experience consisted of 6 teachers, representing 30% of the sample. The fourth category included EFL teachers with more than 15 years of experience consisted of 5 teachers, representing 25%. The variable of experience is significant because there exist a direct relationship between years of experience and teachers' capacity to expand their teaching methods.

Table 2.3. Teachers' Years of Experience

| years of Experience | Frequency | Percent |
|---------------------|-----------|---------|
| 1-5 years | 2 | %10,0 |
| 6-10 years | 7 | %35,0 |
| 11-15 years | 6 | %30,0 |
| More than 15 years | 5 | %25,0 |
| Total | 20 | 100,0 |

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

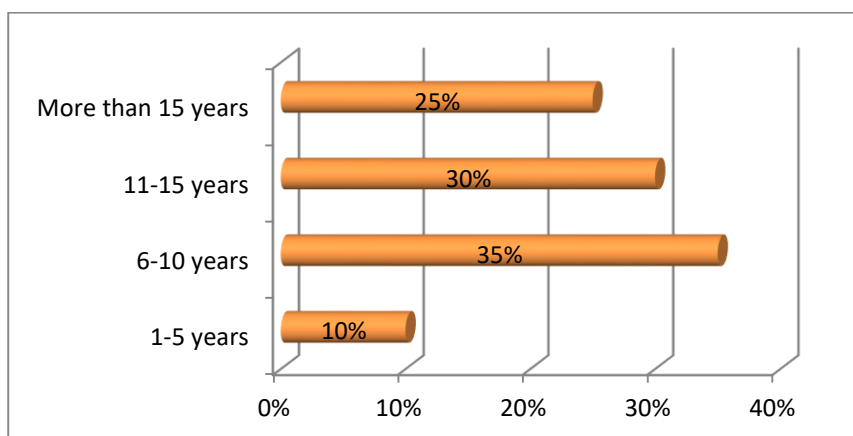


Figure 2.3. Teachers' years of Experience

2.6.4 The Field

Table 2.4. Teachers' Field

| The Field | Frequency | Percent |
|--------------|-----------|--------------|
| Literature | 3 | %15,0 |
| civilisation | 7 | %35,0 |
| ELT | 5 | %25,0 |
| Linguistics | 5 | %25,0 |
| Total | 20 | 100,0 |

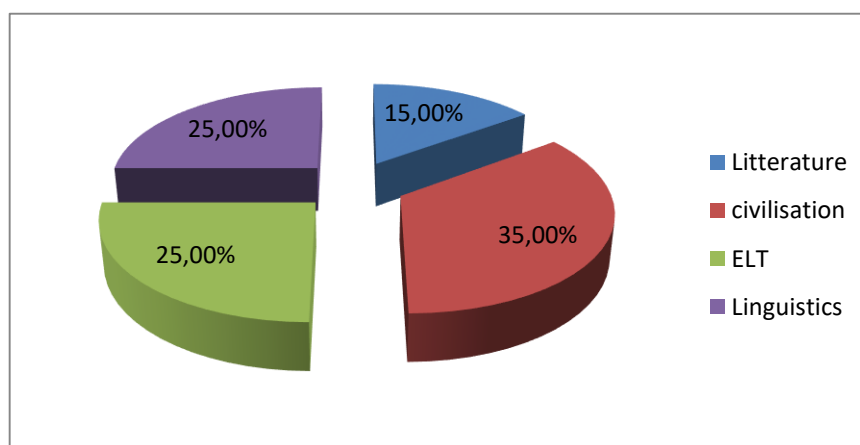


Figure 2.4. Teachers' Field

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

From Figure 2.4 and Table 2.4 we notice that sample consisted of four fields. The first field is literature composed of 3 teachers representing 15%. The second field included civilisation teachers which composed of 7 teachers, representing 35% from the sample. The third field is ELT with 5 teachers, which represent 25%. The fourth field included linguistics which composed of 5 teachers, representing 25% of the sample. It is important to consider the variable of field because teachers from varying fields may have different perspectives and attitudes towards the integration of new technologies.

2.6.5 The Academic Rank

The academic rank is crucial for EFL teachers at university level. It is worth exploring whether teachers with different academic ranks share similar perspectives. The sample included five different academic ranks ranging from the lowest to the highest, divided as follows MAB (Assistant Lecturer), MAA (Lecturer), MCB (Associate Professor) , MCA (Full professor), PROF. The sample included 3 EFL teacher who held MAB rank, representing 15%, 6 teacher with MAA rank representing 30% of the sample, 3 teachers with MCB rank representing 15%, 4 teachers with MCA rank representing 20%, and 4 teachers with PROF rank representing 20% .

Table 2.5. Teachers Academic Rank

| Academic Rank | Frequency | Percent |
|---------------------------------|------------------|----------------|
| MAB (Assistant lecturer) | 3 | %15,0 |
| MAA (lecturer) | 6 | %30,0 |
| MCB(associateprofessor) | 3 | %15,0 |
| MCA (fullprofessor) | 4 | %20,0 |
| PROF | 4 | %20,0 |
| Total | 20 | 100,0 |

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

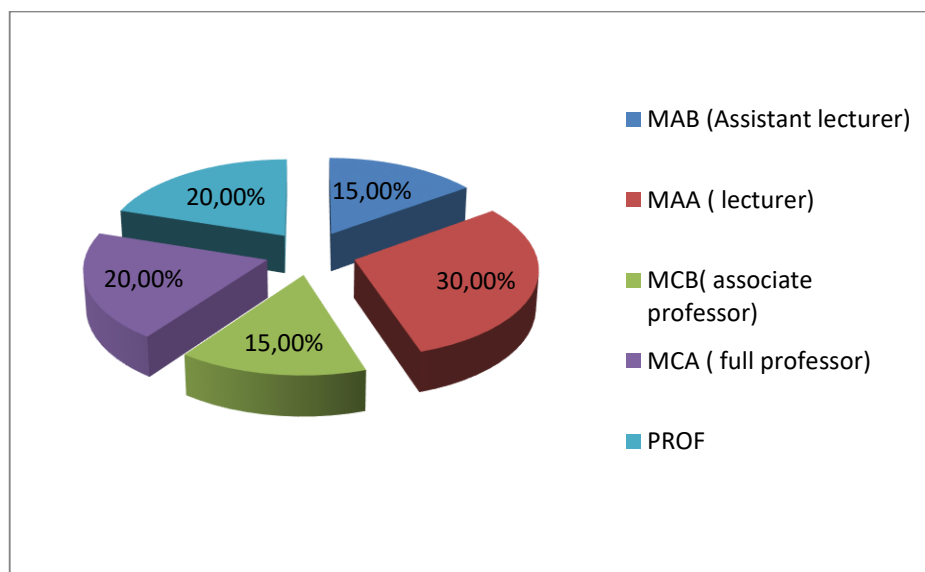


Figure 2.5. Teachers Academic Rank

It is clearly noticed that there is a correlation between teachers' years of experience and their academic rank, teachers with more years of experience have higher ranks, as it is shown in the table below.

Table 2.6. Crosstabulation of Years of Experience and Academic Rank

| Academic Rank | years of experience. | | | | Total |
|---------------|----------------------|-------------|-------------|--------------------|--------------|
| | 1-5 years | 6-10 years | 11-15 years | more than 15 years | |
| MAB | 2 66,7% | 1 33,3% | 0 0,0% | 0 0,0% | 3 100,0% |
| MAA | 0 0,0% | 6 100,0% | 0 0,0% | 0 0,0% | 6 100,0% |
| MCB | 0 0,0% | 0 0,0% | 3 100,0% | 0 0,0% | 3 100,0% |
| MCA | 0 0,0% | 0 0,0% | 3 75,0% | 1 25,0% | 4 100,0% |
| PROF | 0 0,0% | 0 0,0% | 0 0,0% | 4 100,0% | 4 100,0% |
| Total | 2 10,0% | 7 35,0% | 6 30,0% | 5 25,0% | 20 100,0% |

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

2.7 Sampling

The sampling paradigm adopted in the present study is the Convenience Sampling, which falls under the category of non-probability sampling. It involves selecting participants who are readily available and easily accessible. The convenience sampling was adopted due to lack of time to reach all the participants.

2.8 Tools of Research

The current study employed a questionnaire as a main research instrument to collect data. The questionnaire was administered to EFL teachers in the English Language Department at Ammar Telidji University of Laghouat . It is consisted of four constructs, each contains a set of questions or statements. The first section was aimed to gather personal information, such as teachers' age, gender, and years of experience, field, and academic rank. The followed sections focused on teachers' familiarity with the AI , and their level of agreement on five-point Likert scale about teachers efficacy and AI use , ended with open ended questions to gain more insights from participants .

2.9 Analyses of the Results

2.9.1 AI Use in Educational Practices

In this section of the questionnaire participants were asked to answer multiple-choice questions to examine their familiarity with AI tools, as well as their use of these tools in their teaching context.

Table 2.7. Teachers' AI use in relation to their backgrounds

| AI Use (%) | Age | | | Gender | | Experience | | | | Rank | | | | |
|------------|-----|-------|-----|--------|------|------------|------|-------|-----|------|-----|-----|-----|------|
| | 30- | 31/40 | 40+ | Female | Male | 1-5 | 6-10 | 11-15 | 15+ | MAB | MAA | MCB | MCA | PROF |
| | 100 | 75 | 16 | 90 | 22 | 100 | 71 | 50 | 40 | 66 | 66 | 33 | 100 | 25 |

In the table provided, the sample is categorized based on age, gender, experience, and academic rank. Regarding AI use, it is clear that young teachers (less than 30 years old) are more likely to use AI tools in their teaching. Moreover, when it comes to gender, female

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

participants demonstrate high levels of AI use (90%) unlike male participants (22%), indicating The fact that will raise our attention that may be the females are more confident in integrating AI tools in their teaching. When considering teachers' years of experience, teachers with less years of experience showed high level of AI use (100%), however experienced teachers (15+ years) illustrated lowest level of AI use (40%). Furthermore, the data suggests that there is no significant difference in AI among teachers of different ranks. Moreover, teachers who use AI tools in their teaching stated that they mainly use ChatGPT, Grammarly, Canva, and others.

Q7. Have you received any formal training in AI technologies?

Table 2.8. Teachers AI Training

| Answer | Frequency | Percent |
|--------|-----------|---------|
| Yes | 3 | %15,0 |
| No | 17 | %85,0 |
| Total | 20 | 100,0 |

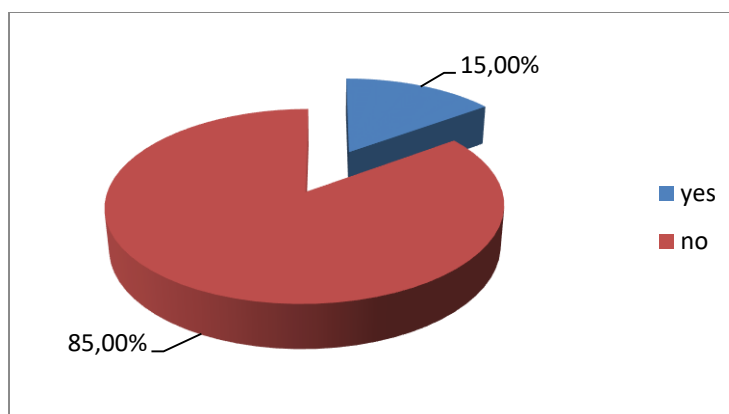


Figure 2.6. Teachers AI Training

As Figure 2.6 and table 2.8 demonstrated, the majority of EFL teachers had not received any formal training in AI technologies since 17 teachers who represent 85% replied negatively ; yet, just 3 teachers who represent 15% of the sample received formal training in AI , which was mostly through university education, training courses, or online research.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

Q8. What is the primary purpose of using AI tools in your classroom?

There exist many purposes of Integrating AI into the classroom, such as enhancing student engagement, personalizing learning, evaluating students and providing feedback.

Table 2.9. The Primary Purpose of Using AI

| Answers | Frequency | Percent |
|---|-----------|---------|
| Enhancing students engagement | 7 | %35 |
| Assessing students and providing feedback | 1 | %5 |
| personalizing learning | 4 | %20 |
| Other answers | 08 | 40% |
| Total | 20 | 100,0 |

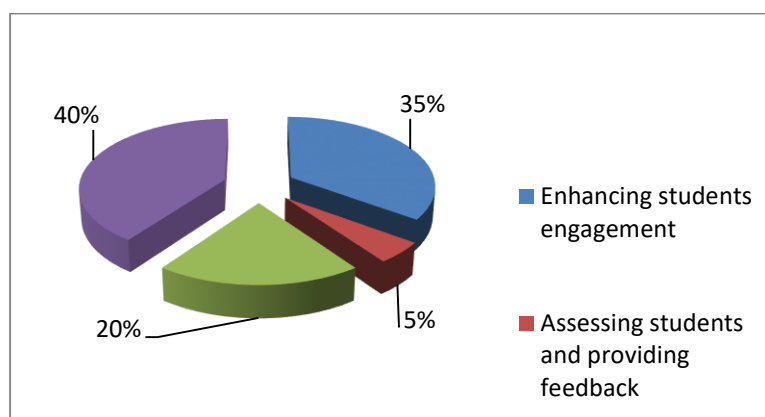


Figure 2.7. The Primary Purpose of Using AI

Table 2.9 and Figure 2.7 illustrate the purposes that encourage teachers to use AI in their classrooms. Overall, it is indicated that the majority of participants (40%) suggested other purposes of using the AI, including motivating students, develop their skills in using technology, and help them understand lessons. Another purpose is enhancing student engagement with 7 teachers representing 35%. Also, 20% claimed that the primary purpose of using AI is personalizing learning. The minority of teachers (5%) said that assessing students and providing feedback is the primary purpose of integrating AI.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

2.9.2 Teachers self-efficacy and AI Use

In this section of the questionnaire, participants were provided with series of statements and were asked to signify their level of agreement on a five-point Likert scale. These statements focused on teachers' self-efficacy and their AI use .

9. I believe I can effectively create a supportive learning environment for my students.

Table 2.10. Teachers Perceptions of Their Ability to Create a Supportive Environment

| Agreement Spectrum | Frequency | Percent |
|-------------------------------|-----------|---------|
| Strongly Disagree (SD) | 0 | %00 |
| Disagree(D) | 0 | %00 |
| Neutral (N) | 2 | %10,0 |
| Agree (A) | 16 | %80,0 |
| Strongly Agree(SA) | 2 | %10,0 |
| Total | 20 | 100,0 |

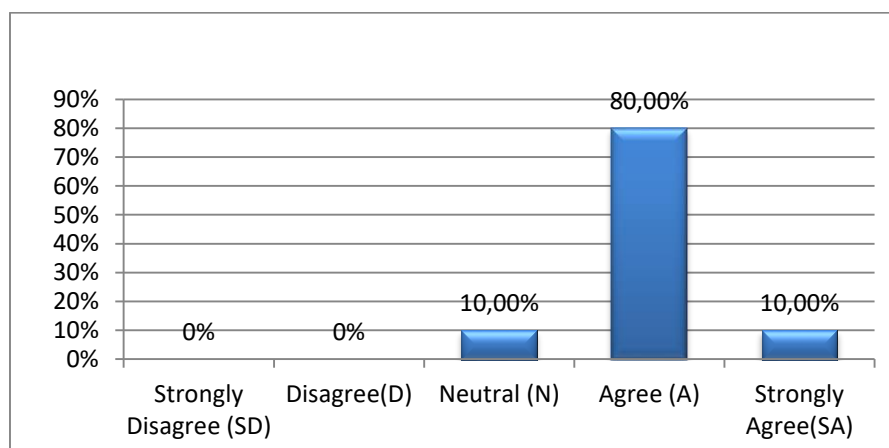


Figure 2.8. Teachers Perceptions of Their Ability to Create a Supportive Environment

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

Table 2.10 demonstrates the responses from teachers regarding their ability to create a supportive learning environment for their students. Out of the total sample, 16 teachers (80%) agreed that they can effectively create a supportive environment. In addition, 2 teachers representing 10% strongly agreed, while 2 teachers (10%) remained neutral. However, no teachers disagreed or strongly disagreed to the statement.

10. I believe I have a positive impact on my students' learning outcomes.

Table 2.11. Teachers' Perceptions of Their Impact on Students

| Agreement Spectrum | Frequency | Percent |
|-------------------------------|-----------|---------|
| Strongly Disagree (SD) | 0 | %00 |
| Disagree(D) | 0 | %00 |
| Neutral (N) | 3 | %15,0 |
| Agree (A) | 15 | %75,0 |
| Strongly Agree(SA) | 2 | %10,0 |
| Total | 20 | 100,0 |

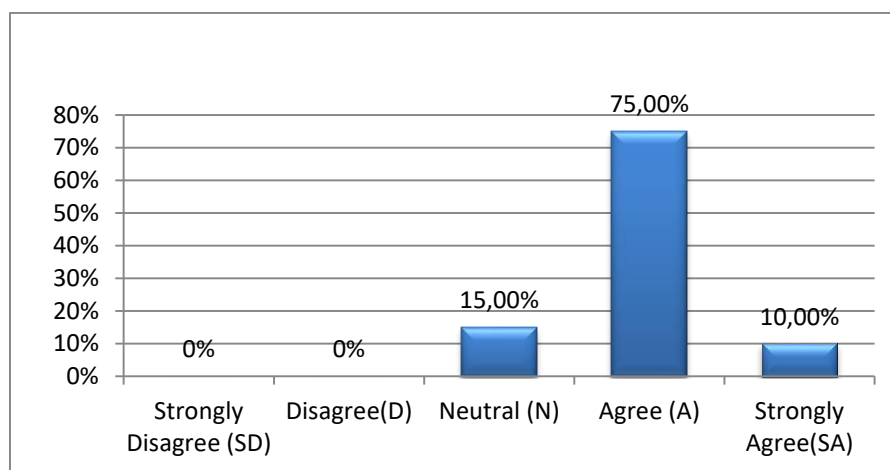


Figure 2.9. Teachers' Perceptions of Their Impact on Students

From Figure 2.9 and Table 2.11 we reveal that the majority of teachers 75% agreed that they can have appositive impact on students' learning outcomes, 15% (3) remained neutral, 10% (2) strongly agreed. Yet, no teachers disagreed or strongly disagreed on the statement related to their impact on students outcomes.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

11. I am confident in integrating new technologies into my teaching

Teachers' confidence in integrating new technologies plays a crucial role in their teaching practices. The table below presents teachers' confidence in using new technologies in their teaching.

Table 2.12. Teachers' Confidence in Integrating New Technologies into Their Classes

| Agreement Spectrum | Frequency | Percent |
|-------------------------------|-----------|---------|
| Strongly Disagree (SD) | 1 | %5,0 |
| Disagree(D) | 1 | %5,0 |
| Neutral (N) | 3 | %15,0 |
| Agree (A) | 12 | %60,0 |
| Strongly Agree(SA) | 3 | %15,0 |
| Total | 20 | 100,0 |

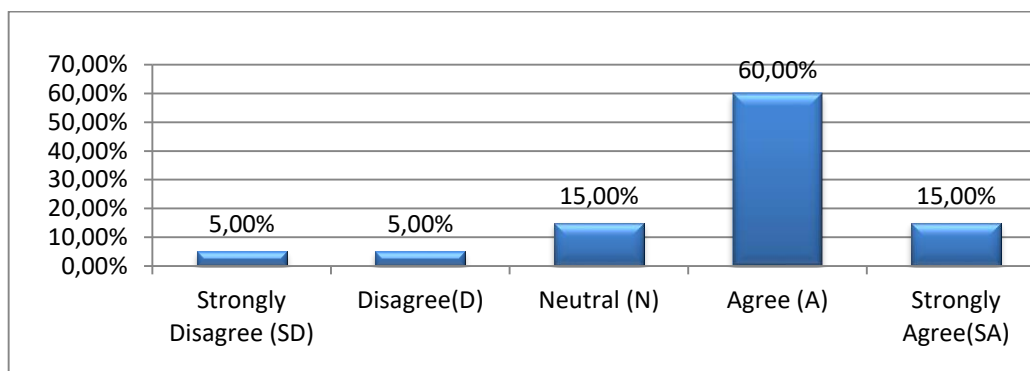


Figure 2.10. Teachers' Confidence in Integrating New Technologies into Their Classes

It can be clearly seen that 1 teacher (5%) strongly disagreed about their level of confidence in integrating new technologies in the classroom, also 1 teacher (5%) disagreed, 3 teachers (15%) remain neutral, the majority of teachers (12) representing 60% of the sample agreed, and 3 teachers (15%) strongly agreed.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

12. I think AI tools could enhance my teaching effectiveness , even if I do not currently use them.

Table 2.13. Teachers Perceptions of AI in Enhancing Their Teaching Effectiveness

| Agreement Spectrum | Frequency | Percent |
|-----------------------|-----------|--------------|
| StronglyDisagree (SD) | 1 | %5,0 |
| Disagree(D) | 0 | %0 |
| Neutral (N) | 4 | %20,0 |
| Agree (A) | 7 | %35,0 |
| StronglyAgree(SA) | 8 | %40,0 |
| Total | 20 | 100,0 |

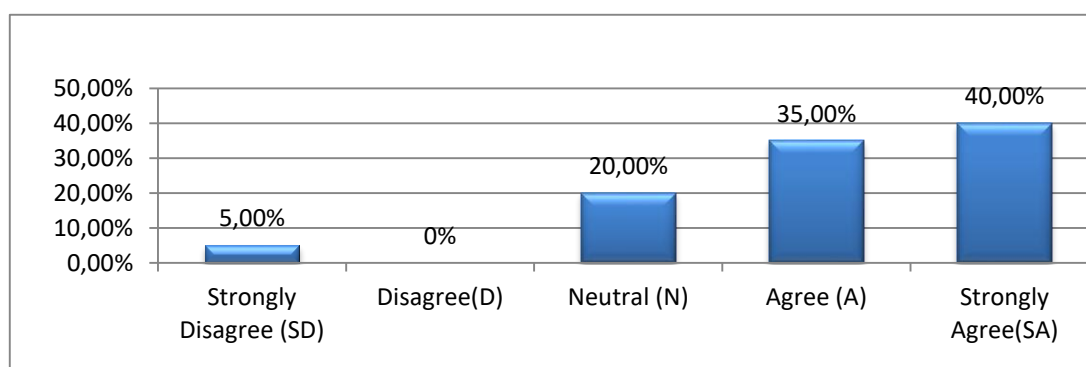


Figure2.11. Teachers Perceptions of AI in Enhancing Their Teaching Effectiveness

Figure 2.11 and Table 2.13 illustrate teachers' level of agreement on the effectiveness of AI tools in enhancing their teaching practices. It demonstrates that 5% of teachers strongly disagreed with the concern that AI can enhance teaching effectiveness, no teacher disagreed, 20% of them remain neutral, 35% agreed, and 40% of teachers strongly agreed.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

13. AI tools help me achieve my teaching objectives

Table 2.14. Teachers' Perspectives of AI Tools in Achieving Their Teaching Objectives

| Agreement Spectrum | Frequency | Percent |
|-----------------------|-----------|--------------|
| StronglyDisagree (SD) | 0 | 0% |
| Disagree(D) | 3 | %15,0 |
| Neutral (N) | 3 | %15,0 |
| Agree (A) | 7 | %35,0 |
| StronglyAgree(SA) | 7 | %35,0 |
| Total | 20 | 100,0 |

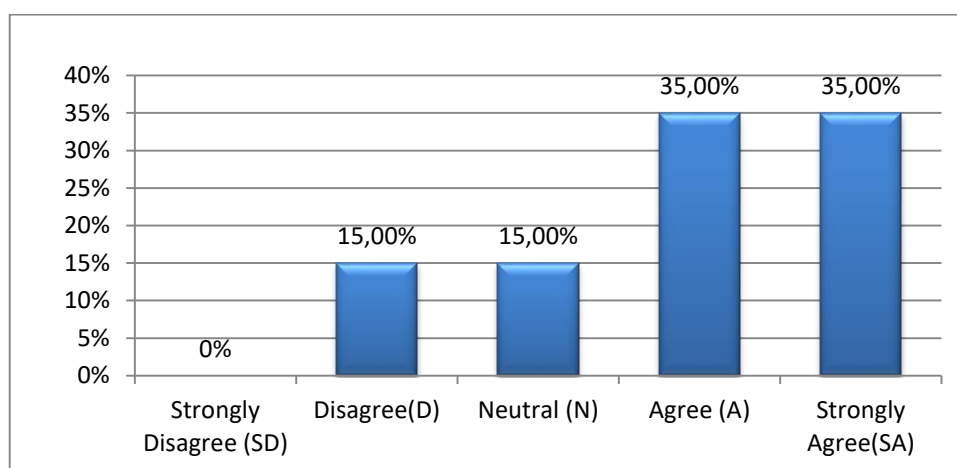


Figure 2.12. Teachers' Perspectives of AI Tools in Achieving Their Teaching Objectives

Table 2.14 and Table 2.12 indicate that no teacher strongly disagreed with the concern that AI tools could help teachers achieve their teaching objectives. However, 3 teachers (15%) disagreed, also 3 (15%) remained neutral, 7 teachers (35%) agreed, and also 7 teachers (35%) strongly agreed.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

14. I am willing to explore and adopt new methods or tools to enhance my teaching

Table 2.15. Teachers' willingness to explore and adopt new tools

| Agreement Spectrum | Frequency | Percent |
|------------------------------|-----------|---------|
| StronglyDisagree (SD) | 0 | 0% |
| Disagree(D) | 0 | %0 |
| Neutral (N) | 0 | %0 |
| Agree (A) | 6 | %30,0 |
| StronglyAgree(SA) | 14 | %70,0 |
| Total | 20 | 100,0 |

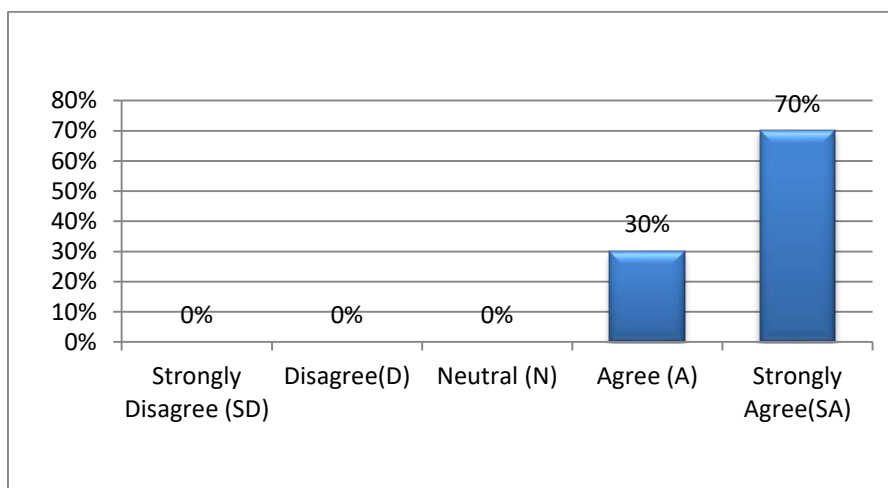


Figure 2.13. Teachers' willingness to explore and adopt new tools

No teacher strongly disagreed, disagreed, or remains neutral about their willingness to explore and adapt new tools to enhance their teaching. However, 6 teachers representing 30% agreed, and 14 teachers representing 70% strongly agreed.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

2.9.3 Thematic analysis

Concerning the open ended questions, the participants have expressed their perceptions regarding the use of AI to overcome classroom challenges and the future of AI in supporting EFL teachers. Their responses presented diverse perspectives highlighting both advantages and concerns about AI in EFL context.

The first question focused on how AI can help address classroom challenges, through asking “How do you think AI can help you overcome classroom challenges?” participants provided insights into different ways AI can be used to solve such problems. The responses highlighted four main themes including AI for automated grading and assessment, AI for individualized learning, AI as a classroom aid, and AI for administrative support .

AI for automated grading and assessment: AI based tools’ ability to provide instant feedback allows teachers to effectively correct their students’ errors.

“It helps with immediate correction of errors”

AI for individualized learning: teachers noted that AI helps in personalizing teaching content according to student levels, ensuring that students receive instructions based on their different levels and needs.

AI as a classroom aid: it is expressed by participants that AI tools help them overcome challenges in the classroom which include lesson plan, student engagement, saving time by automating tasks.

AI for administrative support: teachers have indicated that AI helps them with grading assignments, allowing them to focus more on interactive teaching rather than administrative tasks.

The findings suggest that AI plays a crucial role in addressing classroom challenges, ranging from language support and personalized learning to grading automation and student engagement. It is indeed, thought to be a useful tool for improving the efficacy of instruction.

The last question emphasized teachers’ perceptions about the future of AI in EFL context, the asked question was “What do you think about the future of AI in supporting EFL teachers?” Overall, participants demonstrated that the future of AI is promising but complicated requiring thoughtful integration and human oversight. However, participants’ responses indicated three main themes: AI as an educational assistant, AI’s increased influence on EFL teaching, and AI in overcoming instructional challenges.

AI as an educational Tool: Some responses suggested that AI will act as a teacher, since it can support instruction, facilitate learning, and guide students during their journey.

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

AI's increased influence on EFL teaching: teachers highlighted the remarkable influence of AI on EFL teaching. AI is seen as a transformative force that improves teaching effectiveness and learners' engagement.

AI in overcoming instructional challenges: AI tools contribute in making lesson plan and students engagement easier. Participants indicated that well-trained teachers can develop texts, activities, quizzes and other materials.

The finding revealed that since AI is increasingly being valuable resource for EFL teaching, its effective integration depends on academic training, balanced use, and ethical considerations. Teachers realize AI's ability to significantly enhance teaching practices, but they also emphasize the importance of human supervision to maintain the quality of learning experiences.

2.10 Interpretations and Discussion of the Results

Teachers training in AI technologies

As indicated in Table 2.8 and Figure 2.6 , 85% of teachers have not received any formal training in AI technologies , and only 15% have attended formal training in AI which was mainly through university education, online courses, or online research. However, it is clearly seen from Table 2.7 and Figure 2.9 that teachers are aware of the primary purposes of integrating AI technologies into classrooms, the majority of them (40%) even suggested other purposes of using AI, including motivating students, developing their skills in using technology, and helping them in understanding the lessons. Furthermore, teachers AI training is needed to provide them with strong knowledge, support, and training opportunities that can enhance their readiness to adopt AI technologies in English language teaching. Consequently, when teachers feel supported by educational institutions, through the equipped resources, guidance, and practical information on using AI tools, they will be more confident in integrating these tools and reduces technical concerns.

Teachers' Self-efficacy and AI Use

From teachers' answers to the two first questions, it is clear that the majority of teachers are confident in their abilities to create a supportive learning environment and positively impact students' learning outcomes. As Figure 2.8 and Figure 2.10 demonstrated, 80% of teachers agreed that they can effectively create a supportive environment, and 10% strongly

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

agreed. Moreover, 75% agreed that they are able to positively influence students' learning outcomes, and 10% strongly agreed.

EFL teachers in the English Language Department at Ammar Telidji University have indicated high level of confidence in integrating new technologies in their teaching. Table 2.12 and Figure 2.10 illustrated that 60% of teachers agreed about their level of confidence in integrating new technologies in the classroom, while 15% strongly agreed. Moreover, when teachers were asked about their willingness to explore and adopt new methods or tools to enhance their teaching, 70% of them strongly agreed, and 30% agreed about this concern. From teachers' responses to the two statements, it is demonstrated that teachers are knowledgeable about the new technologies particularly AI tools, and trust their abilities to incorporate them into their teaching practices. This reflects their confidence and likelihood in adopting AI technologies in English language teaching. The significant positive relationship between English language teachers' self-confidence and their likelihood of adopting AI technologies in teaching is attributed to the fact that self-efficacy enables teachers to face challenges and experiment with new methods without fear of failure. Teachers who are confident in their abilities are more willing to explore and implement new tools in the classroom. Because of their belief in their ability to adapt and continuously learn, this confidence also drives them to innovate teaching methods and effectively employ technology to enhance learning, making AI technologies an exciting and beneficial option for him, rather than a complex burden.

Additionally, EFL teachers revealed positive perceptions of AI's pedagogical value, which is noticed in Table 2.13, Table 2.14, Figure 2.11, and Figure 2.12. The majority of teachers (75%) believed that AI tools can enhance teaching effectiveness; while 70% of participants expressed that AI tools could help teachers achieve their teaching objectives. Furthermore, English language teachers hold positive perceptions of artificial intelligence use in their teaching practices. They highly believe that these tools can effectively enhance teaching and learning processes. AI has the potential to enable teachers design instruction, attractive activities, providing instant feedback and automated linguistic corrections. This saves teachers time and effort and helps them focus more on individualized guidance and support. They tend to view these technologies as a valuable mean that can increase the efficiency of learning practices, this can be linked to their extensive knowledge of digital tools, especially after experiencing the online instruction during the COVID-19 pandemic,

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

which has increased their awareness of the importance of integrating technology into their teaching.

2.11 Results of the Hypotheses of the Study:

H01: EFL teachers with high AI familiarity indicate greater willingness to integrate them into their classrooms.

Based on the results obtained, 60% of EFL teachers expressed high levels of AI familiarity and use. They also indicated that the use of AI has many benefits, including motivating students, enhancing their performance, and individualising their learning. Teachers acknowledged the need to adopt modern technologies into teaching, as they believe in its effectiveness in enhancing teaching as well. Furthermore, this familiarity appeared to positively influence their willingness to adopt AI tools in their teaching practices (100% of participants reported their willingness to explore and adopt new tools in their classrooms).

H02: increased AI integration in classroom is significantly associated with AI's positive perceptions about its pedagogical value.

The results highlight the positive concerns held by EFL teachers regarding the use of AI in their classroom and its pedagogical value, highlighting the need to integrate these tools into their classroom practices. It was noticed that 75% of teachers believe that AI tools can enhance teaching effectiveness, and 75% of participants expressed that AI tools help them achieve their teaching goals. Additionally, participants emphasized the potential influence of integrating new tools into ELT context in enhancing teaching effectiveness. They focused on the role of AI in overcoming the classroom obstacles, such as providing immediate correction of errors, designing instructions to different student levels and needs, grading assignments, and enabling students to engage with a variety of materials.

H03: There exist a significant positive relationship between EFL teachers' self-efficacy and their likelihood of using AI in ELT.

The results highlight a positive relationship between EFL teachers' self-efficacy and their likelihood of adopting AI technologies in ELT. Teachers with high self-efficacy are more likely to integrate AI tools in their teaching, based on the recorded results, it is noted that 90% of teachers are able to effectively create a supportive learning environment for students, and 85% of teachers believe that they can have a positive impact on student learning outcomes,

CHAPTER TWO: RESEARCH METHODOLOGY AND RESULTS INTERPRETATIONS

they significantly indicated their readiness to adopt AI technologies in ELT. That is to say, teachers who are confident in their abilities to perform in certain tasks (demonstrating high self-efficacy), tend to explore and implement new tools in the classroom.

H04: teachers AI training can significantly enhance teachers' readiness to adopt AI in language instruction.

Although AI is becoming increasingly prevalent in education and ELT, it is noticed that only 15% of EFL teachers have received formal training in AI technologies, either through their university education or online courses. Despite the limited access to formal training, teachers are still integrating AI into their teaching. This indicates that teachers are self-learning, using general resources, or using AI tools intuitively. Furthermore, those teachers revealed higher levels of readiness to use artificial intelligence in their language instruction.

However, formal training is crucial to enhance teachers' readiness to integrate AI tools into their classrooms. When teachers are supported by educational institutions through providing resources, guidance, and practice on using AI tools, their confidence in using these tools in their instructions is increased. This in turn fosters greater adoption and improves the quality of the educational process.

Conclusion

Overall, this chapter focused on research methodology and the analysis of the data obtained from EFL teachers' questionnaire which provided both quantitative data through close-ended questions (multiple choice questions and likert-scale items), and qualitative data was gathered from the close-ended questions in the questionnaire. The quantitative data was the primary source of finding, and qualitative data served as a mean to provide additional comments. The findings revealed that EFL teachers presented diverse levels of familiarity and use of AI in their teaching practices. Furthermore, teachers who exhibited high levels of AI use showed positive perspectives about its effectiveness, indicating that they have high level of confidence in integrating AI tools in their classrooms. In comparison to other participants, they also displayed lower degrees of fear related to AI tools. Moreover, the findings indicate that the variables of age, gender, years of experience, and gender have a remarkable influence on teachers' responses about AI. However, teachers' Institutional support and access to AI training is needed in order to reduce their technical concerns and increases their confidence in these tools, ultimately enhancing teachers' readiness to integrate AI in English language teaching.

General Conclusion

GENERAL CONCLUSION

General Conclusion

Nowadays, the world has marked significant reliance on modern technologies and AI, which have become ubiquitous in our daily lives, particularly in education and ELT. AI has the potential to transform the traditional learning paradigm and lead to a new era of personalized learning experiences. Therefore, the current study aimed to examine the relationship between the recently developed and ever growing artificial intelligence and teachers' level of efficacy. Specifically, it seeks to understand how the adoption of AI influences teachers' confidence in their ability to effectively deliver instruction, manage the classroom, plan lessons, and engage students.

The research is composed of two parts: theoretical and methodology with data analysis. The first part focuses on introducing more details about the variables of research, it was mainly about the use of AI in education and ELT focusing on the four skills (reading, writing, listening, and speaking), in addition to the Social Cognitive Theory and self-efficacy, providing more insights on teachers self-efficacy and its impact on students outcomes, and factors that influence teachers self-efficacy. The theoretical chapter also highlighted the impact of AI literacy on teachers' level of efficacy.

The second part presented an overview of the research methodology employed in this study to effectively examine the relationship between the recently developed and ever growing artificial intelligence and teachers' level of efficacy, and to assess the impact of AI technologies on teachers' self-efficacy. To achieve this, mixed method approach was employed, combining both quantitative and qualitative data.

The quantitative data was gathered from the open-ended questions (multiple choice questions and likert-scale items) in the questionnaire given to EFL teachers in the Department of English at Laghouat University in Algeria. In this part, teachers were expected to answer a number of questions and indicate their level of agreement on statements in order to assess their AI familiarity and use in academia, as well as their level of self-efficacy in adopting AI technologies in their teaching practices.

GENERAL CONCLUSION

The qualitative data were gathered from the close-ended questions in teachers' questionnaire. This section aims to provide deeper insights from participants concerning the use of AI to overcome classroom challenges and the future of AI in supporting EFL teachers. Through their perspectives, this section highlights technical applications, challenges, and teachers' expectations regarding the future of AI in ELT.

The analysis of the data from the questionnaire revealed that EFL teachers are familiar with AI tools, and reported greater willingness to incorporate them into their teaching, reflecting positive perceptions of AI's pedagogical value. Moreover, teachers have expressed high levels of self-efficacy regarding the use of AI technologies, which presents a significant positive correlation between EFL teachers' self-efficacy and their likelihood of adopting AI technologies in ELT.

Although, teachers have illustrated strong willingness to adopt AI technologies, the data revealed a notable lack of training among EFL teachers, which suggests that they may struggle with the effective application of such technologies due to lack of formal guidance and hands-on experience. Addressing this concern could enhance EFL teachers' confidence in integrating AI tools in their teaching practices.

It is important to point the research limitations as they may have influenced the generalizability and the overall depth of the findings. One of the main limitations in this study is the small sample size, the study focuses on a particular teacher population at Ammar Telidji University of Laghouat, Algeria. The sample was not enough to fully represent EFL teachers in Algerian universities. Additionally, time constraints deadlines restricted the researcher to access larger sample size. Furthermore, another limitation was the lack of previous research on the correlation between the use of AI technologies in educational practices and teachers' level of efficacy.

Recommendations:

Several suggestions for future research are made in light of the study's findings. One of the primary recommendations is to employ a larger sample that fully represent EFL teachers in Algerian universities, leading to more reliable findings. Additionally, it is suggested that future researchers focus on examining the correlation between AI use and students' self-efficacy to explore the influence of AI technologies in students' confidence and self-efficacy. Furthermore, it is recommended to conduct a research about the relationship between AI use

GENERAL CONCLUSION

in educational practices and teachers' knowledge and teaching experience. Exploring this connection would provide valuable insights on how AI influences professional development, pedagogical strategies, and classroom effectiveness. Moreover, future researchers are encouraged to focus on one AI tool such ChatGPT in relation to EFL teachers to assess its benefits, practical applications, and limitations.

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APPENDIX

APPENDIX

APPENDIX

Questionnaire

Dear teachers

You are kindly invited to answer this questionnaire designed to gather information from university EFL teachers regarding their Artificial Intelligence (AI) use in educational practices. The main purpose of this study is to explore the impact of AI integration in educational practices on teacher self-efficacy. It is worth mentioning that the information gathered will only be used for research purposes.

Section 01 : Personal information

1. Age :
2. Gender : Male Female
3. Years of experience : 1-5 years 6-10 years 11-15 years
More than 15 years
4. Your field :
Literature civilization ELT Linguistics
5. Academic rank : MAB (Assistant lecturer) MAA (lecturer) MCB(associate professor) MCA (full professor) PROF

Section02: AI in Educational Practices

6. Do you use AI in your teaching ?

Yes No

If yes , which AI tools do you use in your teaching ? (e.g., ChatGpt ,Grammarly , adaptive learning platforms , etc .)

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APPENDIX

7. Have you received any formal training in AI technologies ?

Yes No

If yes , does this training refer to university training , workshops, or online certifications? (please specify)

.....

8. What is the primary purpose of using AI tools in your classroom ?

- Enhancing students engagement
- Assessing students and providing feedback
- personalizing learning
- Other (please specify)

Section 03 : Teachers efficacy and AI use

Please use the scale below to indicate you agreement level with each of the following statements:

Strongly Disagree (SD) Disagree(D) Neutral (N) Agree (A) Strongly Agree(SA)

| | SD | D | N | A | SA |
|---|----|---|---|---|----|
| 9.I believe I can effectively create a supportive learning environment for my students . | | | | | |
| 10.I believe I have a positive impact on my students' learning outcomes . | | | | | |
| 11.I am confident in integrating new technologies into my teaching . | | | | | |
| 12.I think AI tools could enhance my teaching effectiveness , even if i do not currently use them | | | | | |
| 13.AI tools help me achieve my teaching objectives . | | | | | |
| 14. I am willing explore and adopt new methods or tools to enhance my teaching . | | | | | |

APPENDIX

Section 04 : Open Ended Questions

15. How do you think AI can help you overcome classroom challenges?

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.....
.....

16. What do you think about the future of AI in supporting EFL teachers?

.....
.....

الملخص:

برز الذكاء الاصطناعي كقوة تحويلية أحدثت ثورة في مختلف جوانب الحياة العصرية ، بما في ذلك التعليم و تدريس اللغة الانجليزية . و قد اثر على الطلاب والمعلمين على حد سواء لاسيما فيما يتعلق بثقتهم. هدفت هذه الدراسة إلى دراسة كيفية تأثير دمج تقنيات الذكاء الاصطناعي على ثقة المعلمين في قدرتهم على التعليم بشكل فعال وإدارة الفصل الدراسي. اعتمدت هذه الدراسة مزيجا من المنهجيات الكمية والنوعية لاستكشاف استخدام معلمي اللغة الانجليزية كلغة أجنبية للذكاء الاصطناعي ، و مواقفهم تجاه فعاليته في تعليم اللغة الانجليزية . اضافة إلى دراسة العلاقة بين الكفاءة الذاتية لمعلمي اللغة الانجليزية و رغبتهم في دمج أدوات الذكاء الاصطناعي في ممارساتهم التدريسية . و البحث في العوامل المؤسسية والفردية الرئيسية التي تؤثر على استعداد المعلمين لتبني الذكاء الاصطناعي في تعليم اللغة الانجليزية. أبرزت نتائج هذه الدراسة التصورات الايجابية للقيمة التربوية للذكاء الاصطناعي و التي ترتبط ارتباطا وثيقا بزيادة دمج أدوات الذكاء الاصطناعي في الممارسات الصفية ، مما يبرزها كأداة فعالة و قوية في المجال الأكاديمي و في سياق تعليم اللغة الانجليزية . علاوة على ذلك ، أشارت النتائج إلى وجود علاقة ايجابية مهمة بين الكفاءة الذاتية لمعلمي اللغة الانجليزية كلغة أجنبية و احتمالية اعتمادهم لتقنيات الذكاء الاصطناعي في تعليم اللغة الانجليزية ؛ إذ يظهر المعلمون ذوو الكفاءة الذاتية العالية استعدادا كبيرا لدمج أدوات الذكاء الاصطناعي في ممارساتهم. إضافة إلى ذلك ، اظهر معلمو اللغة الانجليزية أن الحصول على التدريب يعزز بشكل كبير استعداد المعلمين لتبني الذكاء الاصطناعي في الفصول الدراسية. لذا، يوصى بإجراء المزيد من الدراسات بما في ذلك دراسة العلاقة بين استخدام الذكاء الاصطناعي و ثقة الطلاب بأنفسهم ، لاستكشاف تأثير تقنيات الذكاء الاصطناعي على ثقتهم . ومن المجالات البحثية الأخرى الموصى بها ، دراسة العلاقة بين استخدام الذكاء الاصطناعي في الممارسات التعليمية و معارف المعلمين و خبراتهم التدريسية . سيوفر استكشاف هذه العلاقة رؤى قيمة حول كيفية تأثير الذكاء الاصطناعي على التطوير المهني ، و الاستراتيجيات التربوية و فعالية الفصل الدراسي .